

THE CANADIAN GREAT LAKES BASIN

INTAKE OUTFALL ATLAS

(8 Volume Set)

Volume 6

AUGUST 1990

TD
223.3
C43
MOE



Ontario

Environment
Environnement

Jim Bradley, Minister/ministre

Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact ServiceOntario Publications at copyright@ontario.ca

CANADIAN GREAT LAKES BASIN

INTAKE - OUTFALL ATLAS

VOLUME 6

WELLAND CANAL/NIAGARA RIVER

by
Kleinfeldt Consultants Limited

AUGUST 1990

M. Griffiths (ed)

Water Resources Branch
ONTARIO MINISTRY OF THE ENVIRONMENT

1990, Her Majesty the Queen in Right of Ontario

ISBN 0-7729-5510-7



This report was prepared by Kleinfeldt Consultants Ltd. for the Ontario Ministry of the Environment and, while effort has been made to assure the accuracy and applicability of the material contained herein, neither the Ontario Ministry of the Environment, nor any person acting on its behalf:

- (a) makes any warranty, express or implied with respect to the use of any information, apparatus, method or process disclosed in this report or that such use may not infringe privately-owned rights; or
- (b) assumes any liabilities with respect to the use of, or for damages resulting from the use of, any information, apparatus, method or process disclosed in this report.

CANADIAN GREAT LAKES BASIN INTAKE/OUTFALL ATLAS

GUIDE TO USE

INTRODUCTION

The Canadian Great Lakes Basin Intake/Outfall Atlas will be used by various public organizations as well as private concerns for water quality assessment studies, pollution control plans, investigation of bacterial pollution problems at bathing beaches and in the formulation of long range management strategies.

The Canadian Great Lakes Basin, Intake Outfall Atlas is composed of eight separate volumes as listed below:

- Volume 1 - Lake Superior
- Volume 2 - St. Marys River
- Volume 3 - Lake Huron/Georgian Bay
- Volume 4 - St. Clair River/Lake St. Clair/
Detroit River
- Volume 5 - Lake Erie
- Volume 6 - Niagara River/Welland Canal/Welland River
- Volume 7 - Lake Ontario
- Volume 8 - St. Lawrence River

For the purposes of this project, questionnaires were sent to appropriate individuals at public and private intake and outfall facilities. Facilities may fall into any one of the industrial categories, or it can be a municipally or provincially operated Water Treatment Plant (WTP) or a Sewage Treatment Plant (STP). Municipalities were also contacted for information regarding various outfalls such as storm, combined, and sanitary sewers that discharge to the Great Lakes System or tributary stream. The bulk of the data were received by Kleinfeldt between December 1986 and June 1987.

A list of Ontario municipal, provincial and private industrial operations was developed using several sources including: IMIS and UMIS listings, from the Water and Wastewater Management Section, Regional Abatement and Utility Officers, Reports from the International Joint Commission, earlier versions of this Atlas, reports and discussions with various individuals. In order to be included in this Atlas identified operations must either discharge effluent (including cooling water and stormwater) to the Canadian Great Lakes or draw water from the the system. These operations must be located within 2 kilometres of the Great Lakes System shoreline. The Great Lakes System includes all Great Lakes within Canadian boundaries as well as the major Interconnecting Channels.

A report summarizing discharging operations and receiving water bodies has been prepared and submitted, under separate cover, to the Great Lakes Section.

AFER

TD 12233/C43

USING THE ATLAS

I General Layout

The Atlas begins with Volume 1 representing Lake Superior and ends with Volume 8, representing the St. Lawrence River, thus following a general west to east flow. Mapping of the Great Lakes shoreline is accomplished by using continuous and overlapping hydrographic charts and topographic maps.

Each map contains a legend of symbols for quick reference, an orientation arrow indicating the north direction and a bar scale. When working with each map, check the scale as it may vary between maps.

II Legends

Legends provided on each map are self-explanatory. In the case of shore based effluent pipes, including sewer system outfalls, the arrowhead indicating outfall location is on the land side of shoreline. Similarly shore based intakes have their location indicators on the water side of the shoreline. Thus, location indicators also illustrate direction of flow through any given pipe. In some situations, because of pipe length and available map scale, offshore effluent and water intake pipes have been illustrated as shore based, however, consultation with the facing data page will give exact data on length of pipe from shore.

III Maps

Each map is numbered and is accompanied by a data page. Information on industrial, provincial or municipal intake or outfall structures within a map's borders is detailed on the data page. All intakes and outfalls, (excluding sewer system outfalls) have a numerical designation located as close to the actual structure as possible. These numerical designations begin at one (1) for each map, and relate to the "Structure Number" category on each data page. Although limited to descriptions of seven (7) structures per page there can be more than one data page relating to a simple map.

IV General

If a particular structure appears in the area of overlap between two maps the structure will be presented on one map only. However, where there is map duplication (i.e. between volumes) the structures will be mapped and data presented in both volumes.

Water and sewage treatment operations are listed by plant name. The Atlas user should refer to the location category in the data tables for identification of plant location. The abbreviations WPCP and STP describe sewage treatment operations and are assigned to an operation based on MOE designations.

V Lists of Operations:

In order to assist the user in locating the required information on a particular operation, we recommend that the user begin with our lists given below. Please note, these lists do not include municipal jurisdictions that provided sewer/drainage system information only.

Table 1: Listing of all operations that have major intake/outfall structures mapped and tabulated in the Atlas. Does not include municipal sewer/drainage outfalls.

Table 2: Listing of all operations within a given volume and a corresponding index.

Table 3: Listing of industrial operations not responding to the questionnaire (Information was subsequently supplied by the MOE).

VI Abbreviations:

Before using the Atlas it is recommended the user be familiar with the abbreviations presented in Table 4.

VII Explanation of Data Tables:

Table 5 provides a brief explanation of each information category to improve the clarity for the user.

Acknowledgments

The Canadian Great Lakes Basin Intake/Outfall Atlas was compiled by Kleinfeldt Consultants Limited, and with the assistance of the Great Lakes Section of the Ontario Ministry of the Environment's Water Resources Branch.

Kleinfeldt Consultants wishes to thank Mrs. Marta Griffiths of the MOE's Great Lakes Section for her time and patience exhibited throughout the course of this project.

We also acknowledge the efforts of Ministry of the Environment personnel, in the Great Lakes Section, as well as, Regional and District Offices who took the time and made the effort to review the data and maps contained in the Atlas, and provided comments, suggestions and additional information. Their efforts have allowed us to improve the document and hence the overall utility of the Atlas.

Kleinfeldt Consultants would also like to take this opportunity to thank the individuals in the ministry, local municipality and industry that provided information on 500 plus operations included in this Atlas. Without the cooperation and timely responses from the majority of contacts, this project would not have been a success.

Disclaimer

The information contained in this Atlas is as accurate as the information supplied in the completed and returned questionnaires. Due to the nature of the data collection, Kleinfeldt Consultants Limited is not responsible for erroneous information supplied by any one of the 400 plus operations.

Table 1

ALL OPERATIONS INCLUDED IN THE ATLAS

Lake Superior	St. Marys River	Lake Huron/Georgian Bay	St. Clair System	Lake Erie	Welland Canal/Niagara R.	Lake Ontario	St. Lawrence River
Abitibi Price Inc.	Algoma Steel Corp.	Blind River STP	Amherstburg WPCP	Amherstburg WPCP	Anger Ave. WPCP	Ajax WTP	BCL
Abitibi Price T.Bay Div.	Sault. Ste. Marie WPCP(1)	Brights Grove STP	Amherstburg WSS	Blenheim WSS	Atlas Specialty Steels	Amherstveiw WSS	Brockville WPCP
Canada Malting Co.	Sault. Ste. Marie WPCP(2)	Bruce A NGS	Belle River WPCP	Can. Haldiman Norfolk WSS	B.F. Goodrich Canada	Bakelite Thermosets	Brockville WTP
Dontar Packaging Ltd.	Sault. Ste. Marie WTP(1)	Bruce B NGS	Belle River WTP	Crystal Beach WPCP	Canadian Oxy-Chemicals	Baker Road WPCP	Cardinal WPCP
James River-Marathon Ltd.	Sault. Ste. Marie WTP(2)	Bruce Heavy Water Plant	Canadian Liquid Air	Crystal Beach WTP	Casco Company	Bath WPCP	Cardinal WTP
Kimberly Clark Can. Ltd	St. Marys Paper Inc.	Bruce Mines STP	Canadian Salt Co. (1)	Dunville WTP	Cyanamid N. Falls Plant	Bath WTP	Casco Company
Marathon STP	Union Carbide Canada Ltd.	Bruce Mines WTP	Canadian Salt Co. (2)	Elgin Area WSS	Cyanamid Welland Plant	Beamsville WTP	Charlottenburgh TWP. WTP
Nipigon STP		CIL /McDougall TWP	Chinnok Chemical Co.	Erieau Erie Beach WSS	Dontar Fine Papers	Belleville WPCP	Cornwall WPCP
Nipigon WTP		Collingwood WPCP	CIL Inc. Lampton Works	Harrow Colchester WSS	Electro Minerals(CAN)Inc.	Belleville WTP	Cornwall WTP
Northern Wood Preservers		Collingwood WTP	Corunna WPCP	H. J. Heinz Co.	Fleet Manufacturing Co.	Biggar Lagoon	Courtaulds Ltd.
Pancake Bay Prov. Park		Dontar Inc. Sifto Salt	Courtright WPCP	Inco Metals Inc.	Ford Motor Co.	Borg-Warner Chemicals	Dontar Fine Paper
Provincial Paper Division		Douglas Point NGS	Dow Chemical Canada Ltd.	Int. Min. & Chemicals	Fort Erie North Pump Stn.	Bowmanville WTP #1	Dupont Canada
Red Rock WPCP		Eldorado Resources Ltd.	DuPont Canada Inc.	Kent County WSS	Fort Erie South Pump Stn.	Bowmanville WTP #2	Edwardsburg WPCP
Red Rock WTP		Goderich WPCP	Edgewater Beach WPCP	Leamington WPCP	General Motors of Can.Ltd	Brighton STP	Gananoque Lagoon
Rosspoint WTP		Goderich WTP	Esso Petroleum Canada	Manticoke TGS	Hayes Dana Dr. Train Div.	Burlington WTP	Gananoque WTP
Schreiber STP		Goodyear Canada Inc.	Ethyl Canada Inc.	Omstead Foods Ltd.	Holiday Farms	Canada Cement Lafarge Ltd	Iroquois STP
Schreiber WTP		Goodyear Canada Inc.	Fiberglass Canada Inc.	Port Burwell WPCP	Inco Metals Ltd.	Canada Malting Co. Ltd.	Iroquois WTP
Thunder Bay TGS		Gore Bay WPCP	Ford Motor Co. of Can.Ltd	Port Dover WPCP	Kimberly Clark Of Canada	Canadian Vegetable Oil	Kingston (City) WPCP
Thunder Bay WPCP		Gore Bay WTP	General Chemical	Port Dover WTP	Niagara Falls WTP	Canron Inc.	Kraft Foods Ltd.
Thunder Bay WTP		Grand Bend STP	General Motors of Canada	Port Rowan WPCP	Niagara-on-the-Lake STP	Celanese Canada Inc.	Long Sault WPCP
		Kilbear Provincial Park	Hiram Walker & Sons Ltd	Port Rowan WTP	Niagara-on-the-Lake WTP	CFB Mountainveiw WTP	Long Sault WTP
		Kincardine WPCP	J. C. Keath TGS	Port Stanley WTP	Norton Co.	CFB Trenton WPCP	Marimac Inc.
		Kincardine WTP	Lampton County WSS	Port Stanley STP	Ontario Paper Co.	Chrysler Canada Ltd.	Morrisburg WPCP
		Lake Huron WSS	Lampton TGS	Raliegh TWP STP	Ontario Power Co.	Clarkson WPCP	Morrisburg WTP
		Lions Head WTP	Little River WPCP	Rock Pt. Provincial Park	Port Meller WPCP	Cobourg STP #1	Nitrochem Inc.
		Little Current WTP	Mitchells Bay WPCP	Rosney WPCP	Seaway WPCP	Cobourg STP #2	Osnabruck TWP WPCP
		McGregor Point Prov. Park	Mitchells Bay WTP	Rosehill WTP	Sir Adam Beck #1 HGS	Cobourg WTP	Osnabruck TWP WTP
		Meaford WPCP	Novacor Chemicals	Selkirk Provincial Pk.	Sir Adam Beck #2 HGS	Corbett Creek WPCP	Phillips Cables
		Meaford WTP	Petrosar Corunna	Stelco Inc. Erie Works	Stampford/Niagra STP	Darlington NGS	Prescott WTP
		Midland WPCP	Point Edward WPCP	Texaco Canada Inc.	Stelco Inc. Page Hersey	Deseronto WPCP	Richmond Die Casting Ltd.
		Mitsubishi Electronics	Polysar Ltd.	Turkey Pt. Provincial Pk.	Stelco Inc. Welland Tube	Deseronto WTP	River St. Pumping St
		Owen Sound WPCP	Port Lampton WPCP	Union Gas Ltd.	Stevensville Lagoon	Dofasco Inc.	Rohm & Hass Canada Inc.
		Owen Sound WTP	Sarnia WPCP	Union WSS	Union Carbide Canada Ltd.	Dontar Packaging	
		Parry Sound WTP	Shell Canada Ltd.	West Lorne WTP	Welland WPCP	Dontar Wood Preserving	
		Penetanguishene WPCP	Sombra WPCP	Wheatly WTP	Welland WSS	Duffins Creek WPCP	
		Penetang. Hospital STP	Stoney Point WPCP			DuPont Canada Ltd.	
		Petrolia WTP	Sunoco Inc.			Easterly Filtration Plant	
		Port Elgin WTP	The Segrain Co. Ltd.		West Side WPCP	Eldorado Resource Ltd.(1)	
		Port McNicoll STP	Tilbury North WSS			Eldorado Resource Ltd.(2)	
		Port McNicoll WTP	Tilbury WTP			Eldorado Resource Ltd.(3)	
		Rio Algom Ltd.	Wallaceburg WPCP			Elizabeth Gardens PS	
		Southampton WPCP	Wickes Bumper Co. Ltd.			E.D. Smith Limited	
		Southampton WTP	Windsor PUC WTP			Ford Motor Co. of Can.Ltd	
		Standard Aggregates Inc.	Windsor Tecumseh WTP			General Motors of Canada	
		Thessalon Pump House	Windsor WPCP			Goodyear Canada	
		Thessalon STP				Graham Creek WPCP	
		Thornbury WPCP				Griesby WTP	
		Thornbury WTP				Hamilton Wentworth WPCP	

ALL OPERATIONS INCLUDED IN THE ATLAS

[illegible]

Table 1

ALL OPERATIONS INCLUDED IN THE ATLAS

Lake Superior	St. Marys River	Lake Huron/Georgian Bay	St. Clair System	Lake Erie	Welland Canal/Niagara R.	Lake Ontario	St. Lawrence River
						South East WPCP	
						South West WPCP	
						Stelco Inc Parkdale Works	
						Stelco Inc.	
						St. Lawrence Cement	
						St. Lawrence Starch Co.	
						St. Marys Cement Co.	
						Texaco Canada Inc. (1)	
						Texaco Canada Inc. (2)	
						Trenton WPCP	
						Trenton WTP	
						TWP of Etobicoke STP	
						Union Carbide Can. Ltd.	
						Victory Soya Mills	
						Vineland WTP	
						Waupoos Canning Co. Ltd.	
						Wellington Mushroom Farm	
						Wellington WPCP	
						Whitby WTP	

Table 2

OPERATIONS INCLUDED IN VOLUME 6
WELLAND CANAL/NIAGARA RIVER

Operation	Map Number

Anger Ave. WPCP	7
Atlas Specialty Steels	2
B.F. Goodrich Canada	15
Canadian Oxy-Chemicals	7
Casco Company	1
Cyanamid Canada Inc.	15
Cyanamid Canada Inc.	11
Domtar Fine Papers	4
Electro Minerals(CAN) Inc.	10
Fleet Manufacturing Co.	7
Ford Motor Co. Ltd.	16
Fort Erie North Pump Stn.	7
Fort Erie South Pump Stn.	7
General Motors of Can.Ltd	5
Hayes Dana Dr. Train Div.	4
Holiday Farms	9
Inco Metals Ltd.	1
Kimberly Clark Of Canada	4
Niagara Falls WTP	10
Niagara-on-the-Lake STP	14
Niagara-on-the-Lake WTP	14
Norton Co.	10
Ontario Paper Co.	4
Ontario Power	10
Port Robinson WTP	3
Port Weller WPCP	6
Seaway WPCP	1
Sir Adam Beck #1 HGS	10 + 12
Sir Adam Beck #2 HGS	10 + 12
Stampford/Niagra STP	12
Stelco Inc. Page Hersey	2
Stelco Inc. Welland Tube	2
Stevensville Lagoon	9
Union Carbide Canada Ltd.	2
Welland WPCP	3
Welland WSS	2
West Side WPCP	1

Table 4

LIST OF ABBREVIATIONS

CEN	Central
CFB	Canadian Forces Base
CSO	Combined Sewer Overflow
DND	Department of National Defence
EO	Emergency Overflow
IND	Industrial Operation
MGS	Ministry of Government Services
MNR	Ministry of Natural Resources
MOE	Ministry of the Environment
MUN	Municipal Operation
NA	Not Available
NGS	Nuclear Generating Station
P Removal	Phosphorus Removal
PP	Provincial Park
PS	Pumping Station
PUC	Public Utilities Commission
RM	Regional Municipality
S	Sanitary Sewer Overflow
SS	Storm Sewer
STP	Sewage Treatment Plant (same as WPCP)
TGS	Thermal Generating Station
TWP	Township
UV	Ultra-Violet
WPCP	Water Pollution Control Plant (same as STP)
WSS	Water Supply System
WTP	Water Treatment Plants

TABLE 5

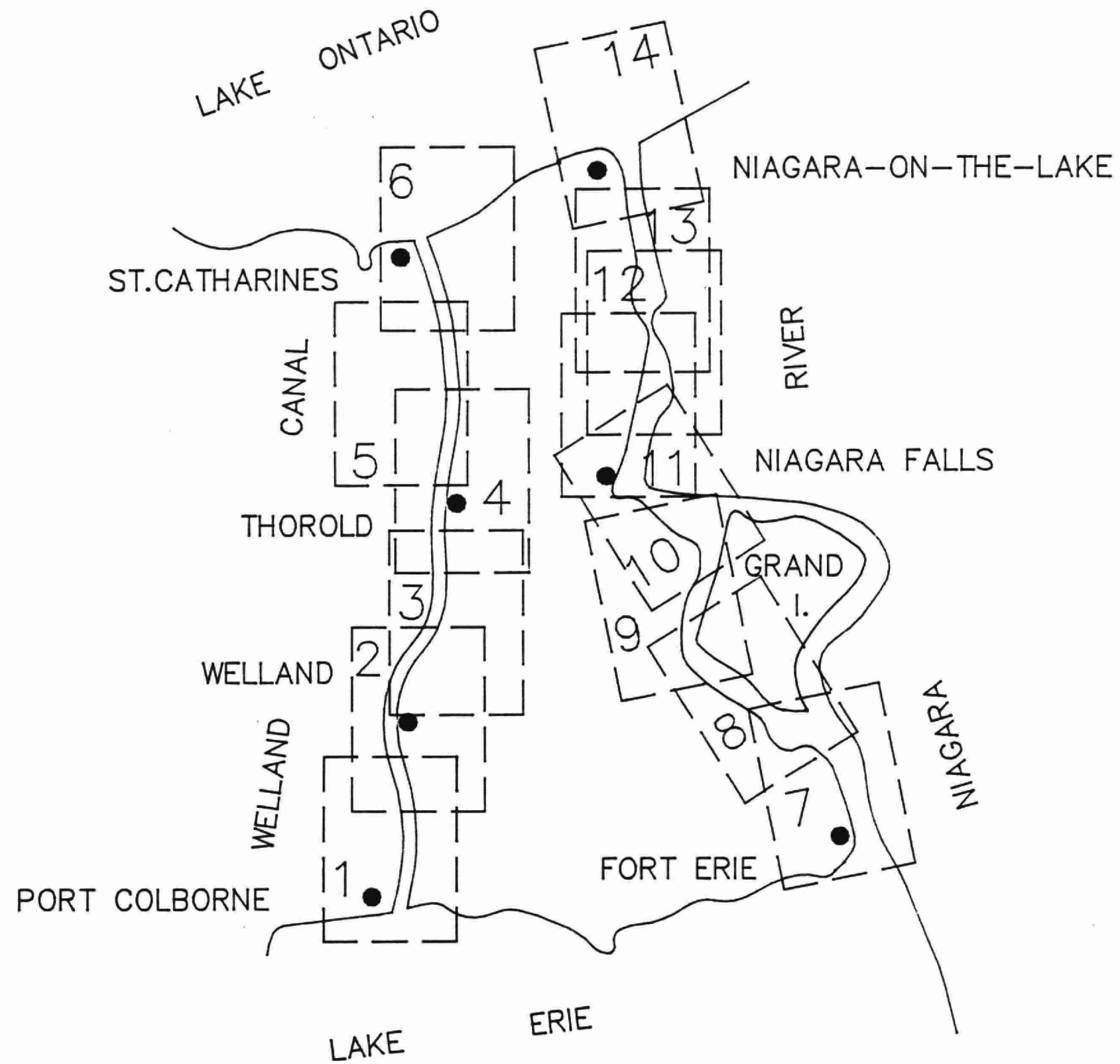
EXPLANATION OF DATA TABLES

Name of Operation:	Name of municipality or industry
Intake/Outfall:	Indication of Use of pipe
UMIS/IMIS No.:	Number in the Ministry's Utility Monitoring Information System and Industrial Monitoring Information System from which other data can be obtained.
Structure No.:	Indicates structures on the accompanying map.
Map No.:	Indicates map on which the structure can be located.
Operating Authority:	Identifies who owns or has jurisdiction over the facility i.e. Industry, MOE, MNR, MUN, PUC, MGS, etc.
Location:	Identifies where the facility and accompanying structures are located (usually indicated by as City, Town or Township).
Supplier/Receiver:	Identifies the water body that wither supplies water to a facility via the intake, or receives effluent via the outfall.
Point of Discharge:	Applies to outfalls only. Indicates location of discharge i.e. shore (0-99 m from shoreline), offshore (≥100m for shoreline), harbour, embayment, river mouth (0-2 km upstream from lake).
Terminal Basin:	Lake or river basin, from which water is drawn or effluent discharged to
Activity:	General categorization of a particular facility (eg. Steel Production, Municipal Water Treatment, etc.)
Process Type:	Description of activity (eg. Major phases of Steel production, Physical and Chemical Treatment, Secondary Treatment, etc.)
Supply/Discharge Type:	Description of how water is drawn in, or effluent discharged (eg. Continuous, Batch Seasonal, etc.)

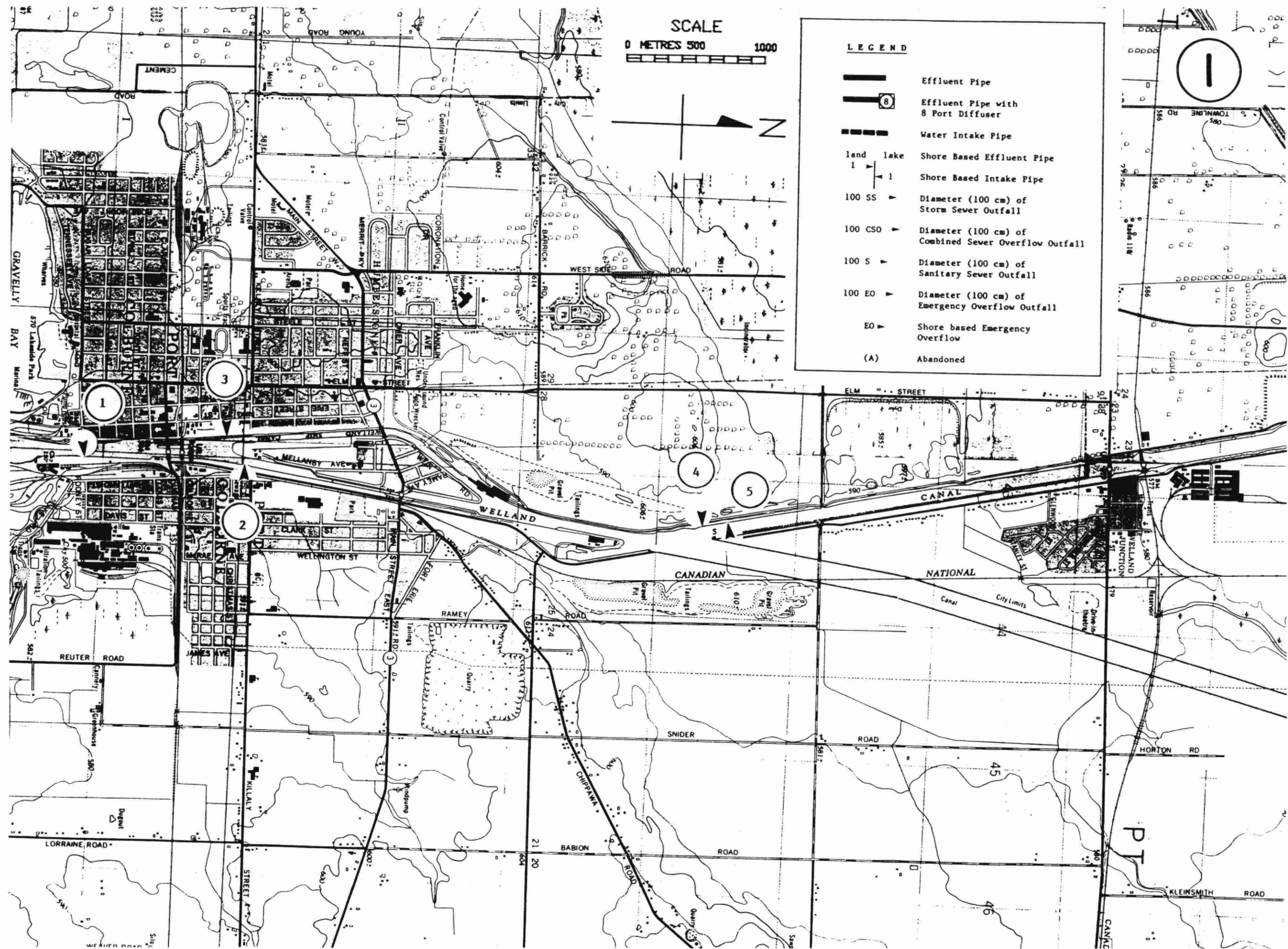
Treatment Type:	Description of how water and/or effluent is treated before use/before discharge. Indication of major steps in treatment, if any.
Comments:	Any other remarks relating to the operation, its intakes or outfalls, process or treatment activities, such as plant closures, future modifications, relationship with nearby operations, etc;
Design Flow:	Quantity (in 1,000 m ³ /day) of water can be drawn in via intake or discharged via outfall according to design specifications.
Mean Annual Flow:	Quantity (in 1,000 m ³ /day) on the average, of water can be drawn in via intake or discharged via outfall according to design specifications.
Pipe Length from Shore:	Length of intake/outfall pipe from shore, given in metres.
Pipe Diameter:	Given in centimeters. If pipe is rectangular or oval in shape, the largest dimension is given.
Water Depth at End of Pipe:	Depth of water, in metres, at the end of the pipe.
Water Depth above End of Pipe:	Depth of water, in metres, above the end of the pipe.
Diffuser:	Applies to outfall structures only. Indicates if an effluent diffusing structure is present on the outfall.
Number of Ports:	If diffuser is present on the outfall an indication is given to the number of ports in the diffusing structure.

KEY PLAN

WELLAND CANAL/NIAGARA RIVER KEY PLAN

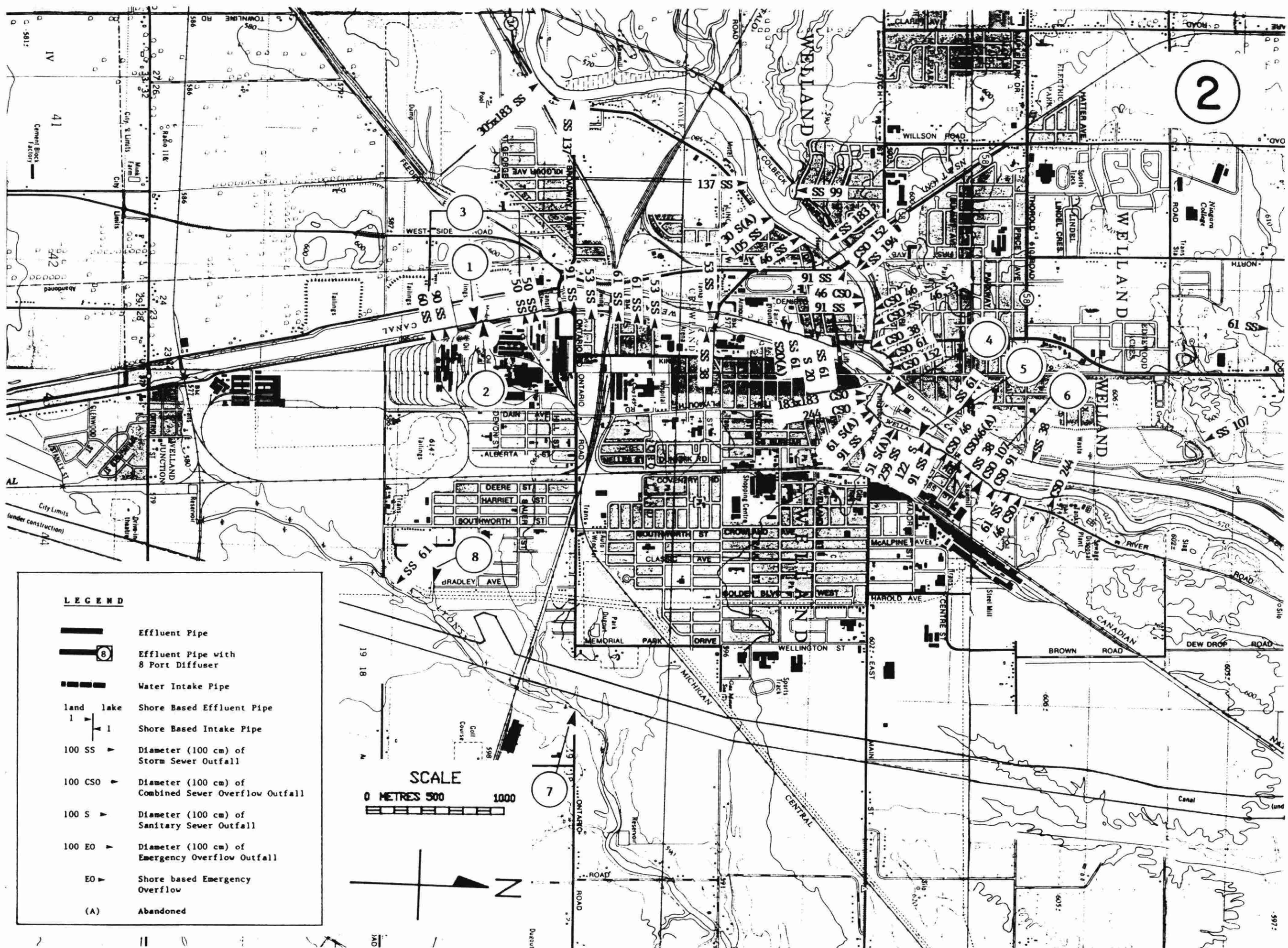


Name	Inco Metals Ltd.	Seaway WPCP	West Side WPCP	Casco Company	Casco Company		
Intake/Outfall	Intake	Outfall	Outfall	Outfall	Intake		
UMIS/IMIS No.	0001600105	120001906	1200013316	NA	NA		
Structure No.	1	2	3	4	5		
Map Number	1	1	1	1	1		
Operating Authority	IND	Niagara RM	Niagara RM	IND	IND		
Location	Port Colborne	Port Colborne	Port Colborne	Port Colborne	Port Colborne		
Supplier/Receiver	Welland Canal	Welland Canal	Welland Canal	Welland Canal	Welland Canal		
Point of Discharge		Shore	Shore	Shore			
Terminal Basin	Welland Canal	Welland Canal	Welland Canal	Welland Canal	Welland Canal		
Activity	Metal Smelting, Refining and Recovery	Municipal Sewage Treatment	Municipal Sewage Treatment	Production of Food and Related Products	Production of Food and Related Products		
Process Type	Nickel, Cobalt & precious metals prod. Electrolytic recovery of pure metals	Secondary Treatment	Secondary Treatment	Wet corn milling and sugar refining	Wet corn milling and sugar refining		
Supply/Discharge Type	Continuous	Continuous	Batch	Continuous	Continuous		
Treatment Type	Screened & Chlorinated	Biological Mechanical Aeration P Removal-Continuous	Biological Mechanical Aeration P Removal-Continuous	Filtered & Chlorinated	Filtered & Chlorinated		
Comments			Discharge is continuous when operating as a backup to Seaway WPCP	Future modifications will increase discharge and intake volumes to 19 (1000m3/day)	Future modifications will increase discharge and intake volumes to 19 (1000m3/day)		
Design Flow (1000m3/day)	28.00	15.01	15.01	12.00	12.00		
Mean Annual Flow (1000m3/day)	14.00	13.92	2.10	4.20	4.20		
Pipe length from shore (m)	NA	0.00	0.00	12.20	0.00		
Pipe Diameter (cm)	122.00	135.00	90.00	53.00	40.60		
Water Depth at end of pipe (m)	3.00	8.50	8.50	3.78	2.74		
Water depth above end of pipe (m)	2.40	0.50	0.00	3.25	2.74		
Diffuser		NO	NO	NO			
Number of ports							














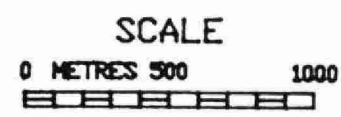
Name	Union Carbide Canada Ltd.	Union Carbide Canada Ltd.	Union Carbide Canada Ltd.	Welland WSS	Atlas Specialty Steels	Atlas Specialty Steels	Stelco Welland Tube Works
Intake/Outfall	Intake	Outfall	Outfall	Intake	Intake	Outfall	Outfall
UMIS/IMIS No.	NA	NA	NA	220002048	0001610005	0001610005	0000950204
Structure No.	1	2	3	4	5	6	7
Map Number	2	2	2	2	2	2	2
Operating Authority	IND	IND	IND	Niagara RM	IND	IND	IND
Location	Welland	Welland	Welland	Welland	Welland	Welland	Welland
Supplier/Receiver	Welland Canal	Welland Canal	Welland Canal	Welland Canal	Old Welland Canal	Welland River	Lyons Creek
Point of Discharge		Shore	Shore			Shore	River Mouth
Terminal Basin	Welland Canal	Welland Canal	Welland Canal	Welland Canal	Lake Ontario	Niagara River	Niagara River
Activity	Manufacturing of mineral related products	Manufacturing of mineral related products	Manufacturing of mineral related products	Municipal Water Treatment	Secondary Steel Industry	Secondary Steel Industry	Secondary Steel Industry
Process Type	Carbon & Graphite Electrode Manufacturing	Carbon & Graphite Electrode Manufacturing	Carbon & Graphite Electrode Manufacturing	Physical and Chemical Treatment	Scrap metal recycling producing various grades of stainless steel	Scrap metal recycling producing various grades of stainless steel	Manufacturing of Welded Steel Tubes for Coiled and Large Diameter Pipe
Supply/Discharge Type	Continuous	Continuous	Batch	Continuous	Continuous	Continuous	Continuous
Treatment Type	Coarse Screening	Coarse Filtered	None	Filtration, Coagulation, Flocculation, Chlorination and Fluoridation	None	Filtered	Oil and Grease Separation
Comments	Cooling water only Three intake ports	Cooling water only	Four Storm Sewer Outfalls			Outfall is the same as City CSO.	
Design Flow (1000m3/day)	39.00	39.00	NA	109.12	144.36	144.36	NA
Mean Annual Flow (1000m3/day)	14.30	12.90	NA	34.52	28.75	28.75	1.14
Pipe length from shore (m)	6.00	1.00	0.00	0.00	NA	NA	NA
Pipe Diameter (cm)	30.00	60.00	60, 90, 50, 50	240.00	NA	107.00	91.00
Water Depth at end of pipe (m)	3.50	1.00	NA	7.70	NA	1.83	NA
Water depth above end of pipe (m)	NA	0.50	NA	2.00	NA	NA	NA
Diffuser		NO	NO			NO	NO
Number of ports							

2



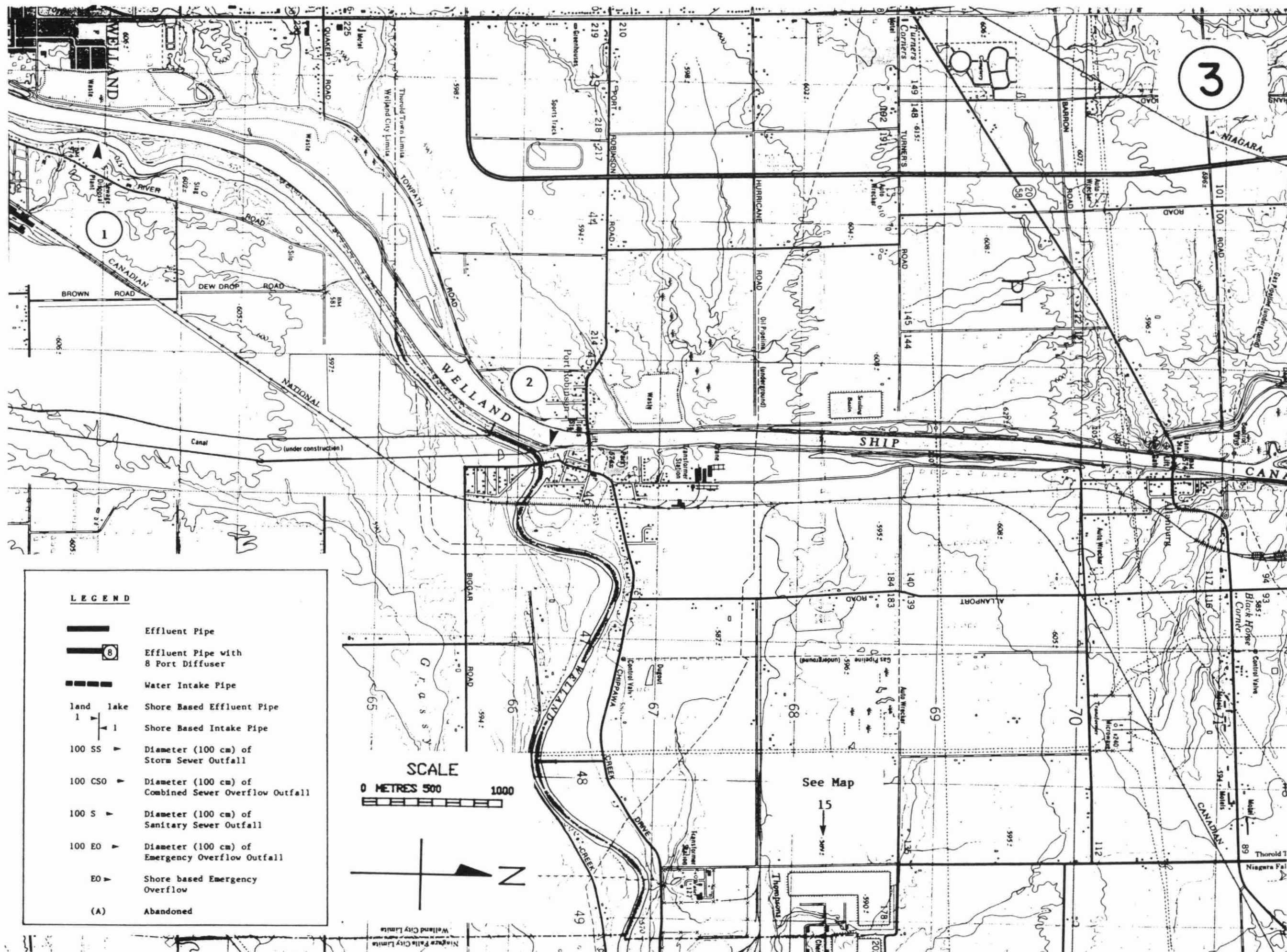
LEGEND

-  Effluent Pipe
-  Effluent Pipe with 8 Port Diffuser
-  Water Intake Pipe
-  Shore Based Effluent Pipe
-  Shore Based Intake Pipe
-  100 SS > Diameter (100 cm) of Storm Sewer Outfall
-  100 CSO > Diameter (100 cm) of Combined Sewer Overflow Outfall
-  100 S > Diameter (100 cm) of Sanitary Sewer Outfall
-  100 EO > Diameter (100 cm) of Emergency Overflow Outfall
-  EO > Shore based Emergency Overflow
-  (A) Abandoned

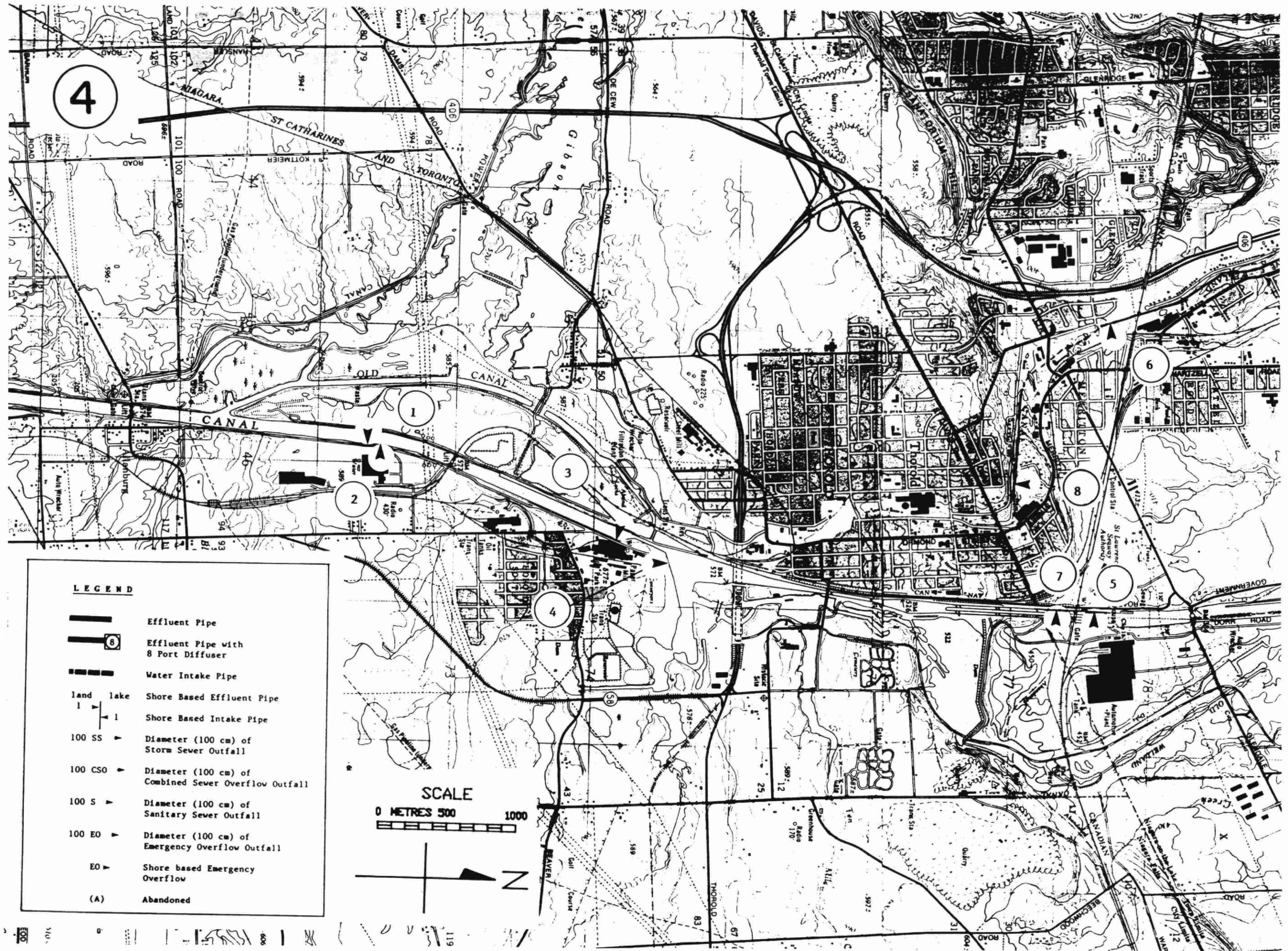


Name	Stelco Page Hersey Works					
Intake/Outfall	Outfall					
UNIS/INIS No.	0000950303					
Structure No.	8					
Map Number	2					
Operating Authority	IND					
Location	Welland					
Supplier/Receiver	Lyons Creek					
Point of Discharge	River Mouth					
Terminal Basin	Niagara River					
Activity	Secondary Steel Industry					
Process Type	Manufacturing of small diameter seamless pipe steel billets					
Supply/Discharge Type	Continuous					
Treatment Type	NA					
Comments						
Design Flow (1000m3/day)	NA					
Mean Annual Flow (1000m3/day)	12.54					
Pipe length from shore (m)	NA					
Pipe Diameter (cm)	NA					
Water Depth at end of pipe (m)	NA					
Water depth above end of pipe (m)	NA					
Diffuser	YES					
Number of ports	NA					












Name	Welland WPCP	Port Robinson WTP					
Intake/Outfall	Outfall	Intake					
UNIS/IMIS No.	120001309	220001922					
Structure No.	1	2					
Map Number	3	3					
Operating Authority	Niagara RM	Niagara RM					
Location	Welland	Thorold					
Supplier/Receiver	Welland River	Welland Canal					
Point of Discharge	Shore						
Terminal Basin	Niagara River	Welland Canal					
Activity	Municipal Sewage Treatment	Municipal Water Treatment					
Process Type	Secondary Treatment	Physical and Chemical Treatment					
Supply/Discharge Type	Continuous	Continuous					
Treatment Type	Conventional Activated Sludge, Mechanical Aeration	Screening, Filtration Coagulation, Chlorination Fluoridation					
P Removal-Continuous							
Comments							
Design Flow (1000m3/day)	45.49	1.30					
Mean Annual Flow (1000m3/day)	36.18	0.19					
Pipe length from shore (m)	0.00	60.00					
Pipe Diameter (cm)	135.00	3.75					
Water Depth at end of pipe (m)	0.00	7.70					
Water depth above end of pipe (m)	0.00	7.50					
Diffuser	NO						
Number of ports							



Name	Hayes Dana Dr. Train Div.	Hayes Dana Dr. Train Div.	Ontario Paper Co.	Ontario Paper Co.	Dowtar Fine Papers	Dowtar Fine Papers	Kimberly Clark Of Canada
Intake/Outfall	Intake	Outfall	Intake	Outfall	Intake	Outfall	Intake
UMIS/IMIS No.	NA	NA	0000930008	0000930008	0000140509	0000140509	0000830208
Structure No.	1	2	3	4	5	6	7
Map Number	4	4	4	4	4	4	4
Operating Authority	IND	IND	IND	IND	IND	IND	IND
Location	Thorold	Thorold	Thorold	Thorold	St. Catharines	St. Catharines	St. Catharines
Supplier/Receiver	Welland Canal	Welland Canal	Welland Canal	Old Welland Canal	Welland Canal	Old Welland Canal	Welland Canal
Point of Discharge		Shore		River Mouth		River Mouth	
Terminal Basin	Welland Canal	Welland Canal	Welland Canal	Lake Ontario	Welland Canal	Lake Ontario	Welland Canal
Activity	Auto Parts Manufacturing	Auto Parts Manufacturing	Pulp and Paper Manufacturing	Pulp and Paper Manufacturing	Paper Mill	Paper Mill	Paper Manufacturing
Process Type	Steel & Cast Auto parts	Steel & Cast Auto parts	Sulphite & TMP pulping newsprint production and recycling	Sulphite & TMP pulping newsprint production and recycling	Mfg. Of Paper from Pulp Bales	Mfg. Of Paper from Pulp Bales	Pulp and clean waste paper is made into tissue and specialty paper
Supply/Discharge Type	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Treatment Type	Screen filter	Separator	Screening & Partially Filtered	NA	Sand Filtration	Primary Clairifier	Settling Beds
Comments	Cooling Water	Cooling Water	Sulphite pulp mill will shut down in 1987	Sulphite pulp mill will shut down in 1987			
Design Flow (1000m3/day)	NA	NA	NA	NA	NA	13.10	4.54
Mean Annual Flow (1000m3/day)	0.45	0.45	115.00	115.00	9.75	9.75	NA
Pipe length from shore (m)	30.48	0.00	NA	NA	0.00	0.00	0.00
Pipe Diameter (cm)	45.00	45.00	NA	NA	61.00	152.00	41.00
Water Depth at end of pipe (m)	2.13	1.00	NA	NA	0.00	NA	NA
Water depth above end of pipe (m)	1.22	0.00	NA	NA	0.00	NA	NA
Diffuser		NO		NO		NO	
Number of ports							



LEGEND

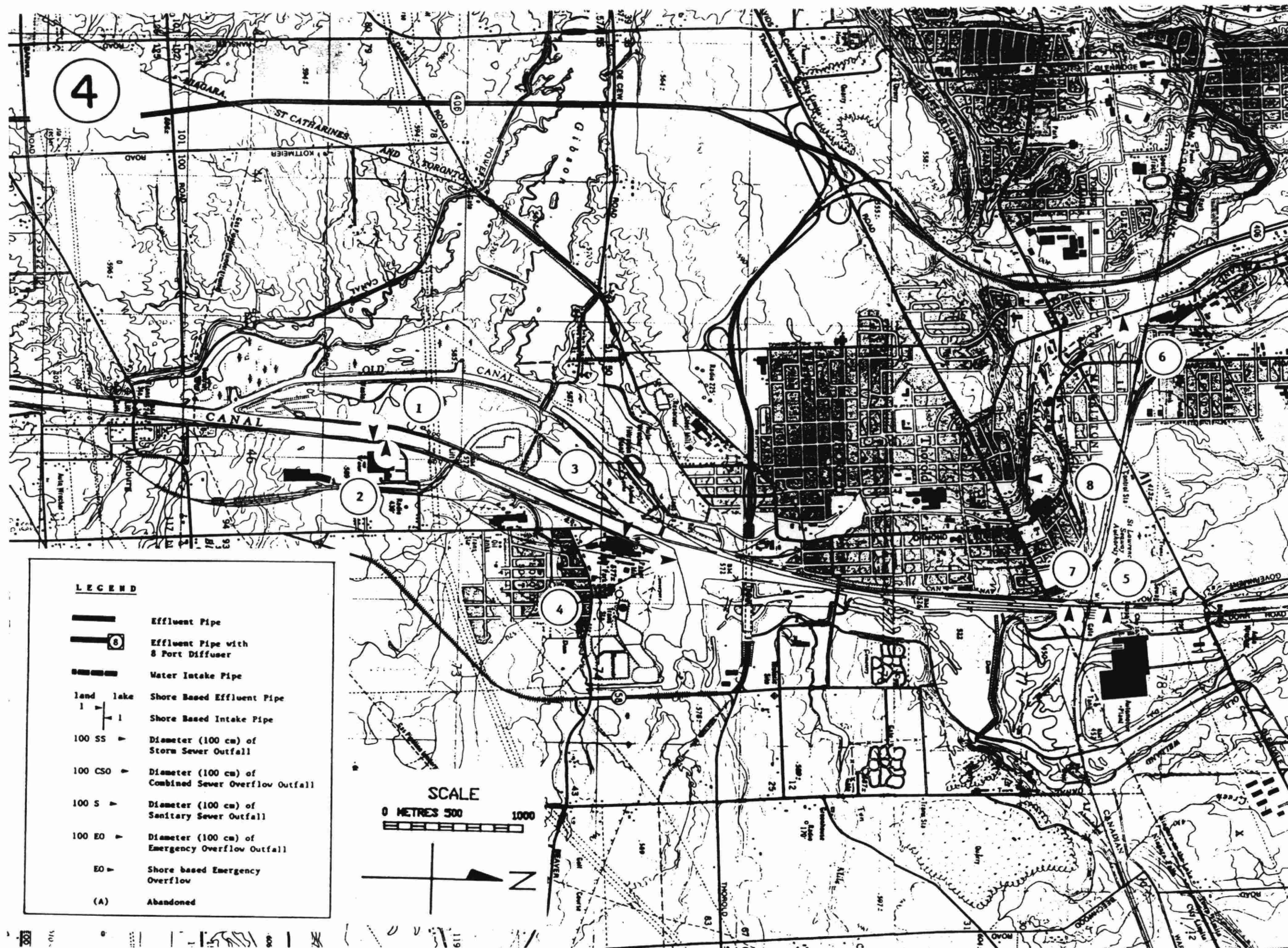
-  Effluent Pipe
-  Effluent Pipe with 8 Port Diffuser
-  Water Intake Pipe
- land lake
 Shore Based Effluent Pipe
-  Shore Based Intake Pipe
- 100 SS  Diameter (100 cm) of Storm Sewer Outfall
- 100 CSO  Diameter (100 cm) of Combined Sewer Overflow Outfall
- 100 S  Diameter (100 cm) of Sanitary Sewer Outfall
- 100 EO  Diameter (100 cm) of Emergency Overflow Outfall
- EO  Shore based Emergency Overflow
- (A)  Abandoned

SCALE

0 METRES 500 1000



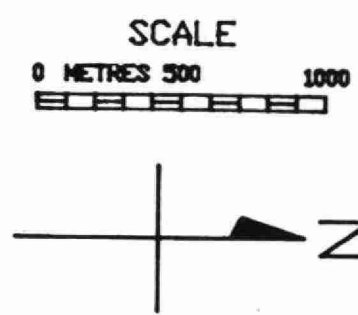
Name	Kimberly Clark Of Canada					
Intake/Outfall	Outfall					
DMIS/INIS No.	0000830208					
Structure No.	8					
Map Number	4					
Operating Authority	IND					
Location	St. Catharines					
Supplier/Receiver	Old Welland Canal					
Point of Discharge	River Mouth					
Terminal Basin	Lake Ontario					
Activity	Paper Manufacturing					
Process Type	Pulp and clean waste paper is made into tissue and specialty paper					
Supply/Discharge Type	Continuous					
Treatment Type	Clarifier & Retention Ponds					
Comments						
Design Flow (1000m3/day)	15.90					
Mean Annual Flow (1000m3/day)	7.57					
Pipe length from shore (m)	0.00					
Pipe Diameter (cm)	61.00					
Water Depth at end of pipe (m)	NA					
Water depth above end of pipe (m)	NA					
Diffuser	NO					
Number of ports						



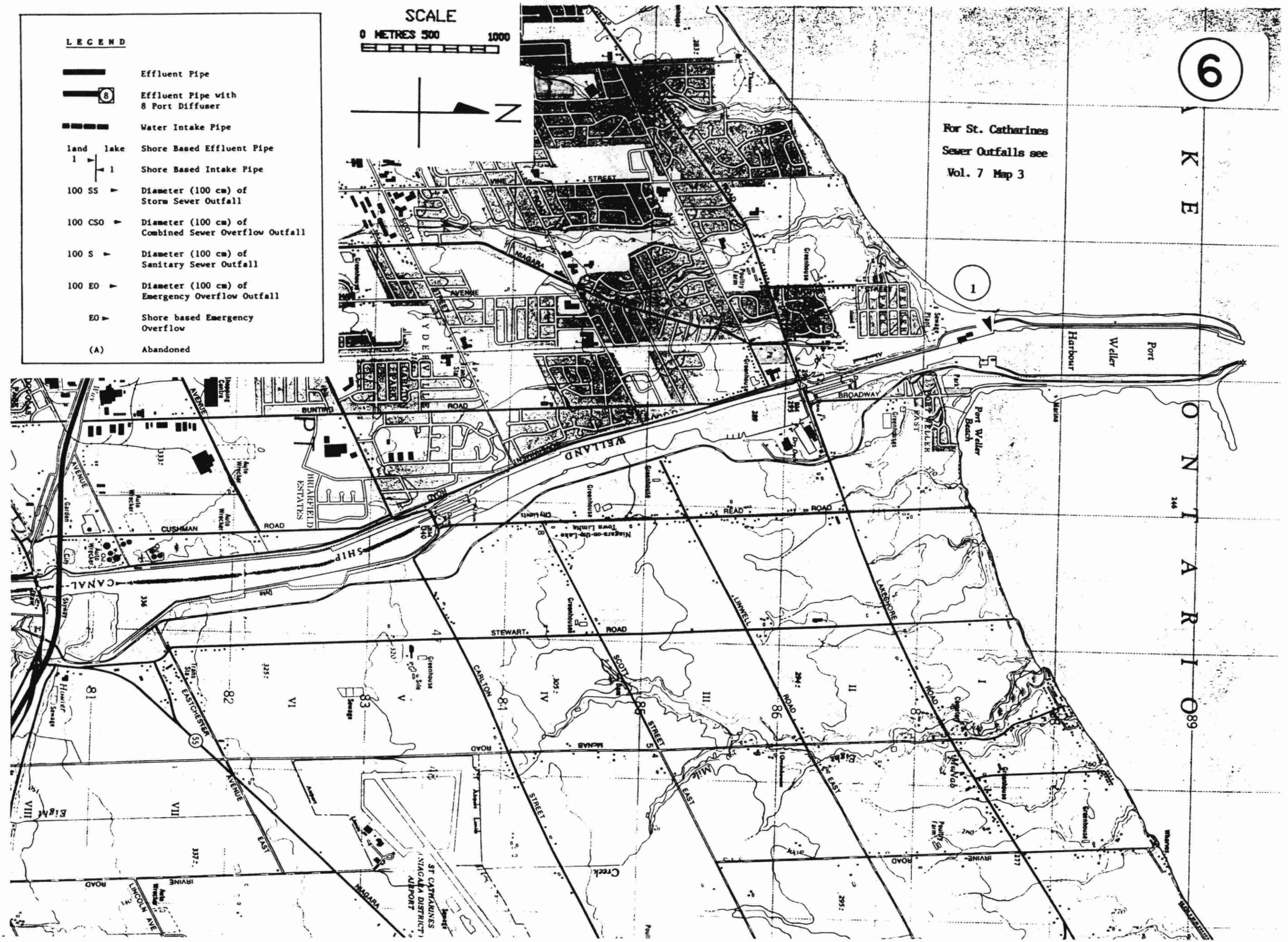
Name	General Motors of Can.Ltd		General Motors of Can.Ltd				
Intake/Outfall	Intake	Outfall					
UNIS/INIS No.	0001630003	0001630003					
Structure No.	1	2					
Map Number	5	5					
Operating Authority	IND	IND					
Location	St. Catharines	St. Catharines					
Supplier/Receiver	Welland Canal	Old Welland Canal					
Point of Discharge		River Mouth					
Terminal Basin	Welland Canal	Lake Ontario					
Activity	Automobile Parts Manufacturing	Automobile Parts Manufacturing					
Process Type	Cast engine parts Mfg. using charged coke and iron scrap	Cast engine parts Mfg. using charged coke and iron scrap					
Supply/Discharge Type	Continuous	Continuous					
Treatment Type	Rotating Coarse Mesh then 0.20 slot strainers	Lagoon Suspended Solids Removal & Screening					
Comments	Water used for cooling & dust collection	Cooling water, dust collection and stormwater effluent					
Design Flow (1000m3/day)	163.00	163.00					
Mean Annual Flow (1000m3/day)	148.00	148.00					
Pipe length from shore (m)	4.00	0.00					
Pipe Diameter (cm)	91.00	NA					
Water Depth at end of pipe (m)	11.00	NA					
Water depth above end of pipe (m)	9.70	NA					
Diffuser		NO					
Number of ports							

Name	Port Weller WPCP						
Intake/Outfall	Outfall						
UNIS/INIS No.	120001318						
Structure No.	1						
Map Number	6						
Operating Authority	Niagara RM						
Location	St. Catharines						
Supplier/Receiver	Welland Canal						
Point of Discharge	Shore						
Terminal Basin	Welland Canal/L.Ontario						
Activity	Municipal Sewage Treatment						
Process Type	Secondary Treatment						
Supply/Discharge Type	Continuous						
Treatment Type	Biological Treatment Mechanical Aeration P Removal-Continuous						
Comments							
Design Flow (1000m3/day)	54.59						
Mean Annual Flow (1000m3/day)	41.87						
Pipe length from shore (m)	0.00						
Pipe Diameter (cm)	105.00						
Water Depth at end of pipe (m)	9.00						
Water depth above end of pipe (m)	0.00						
Diffuser	NO						
Number of ports							

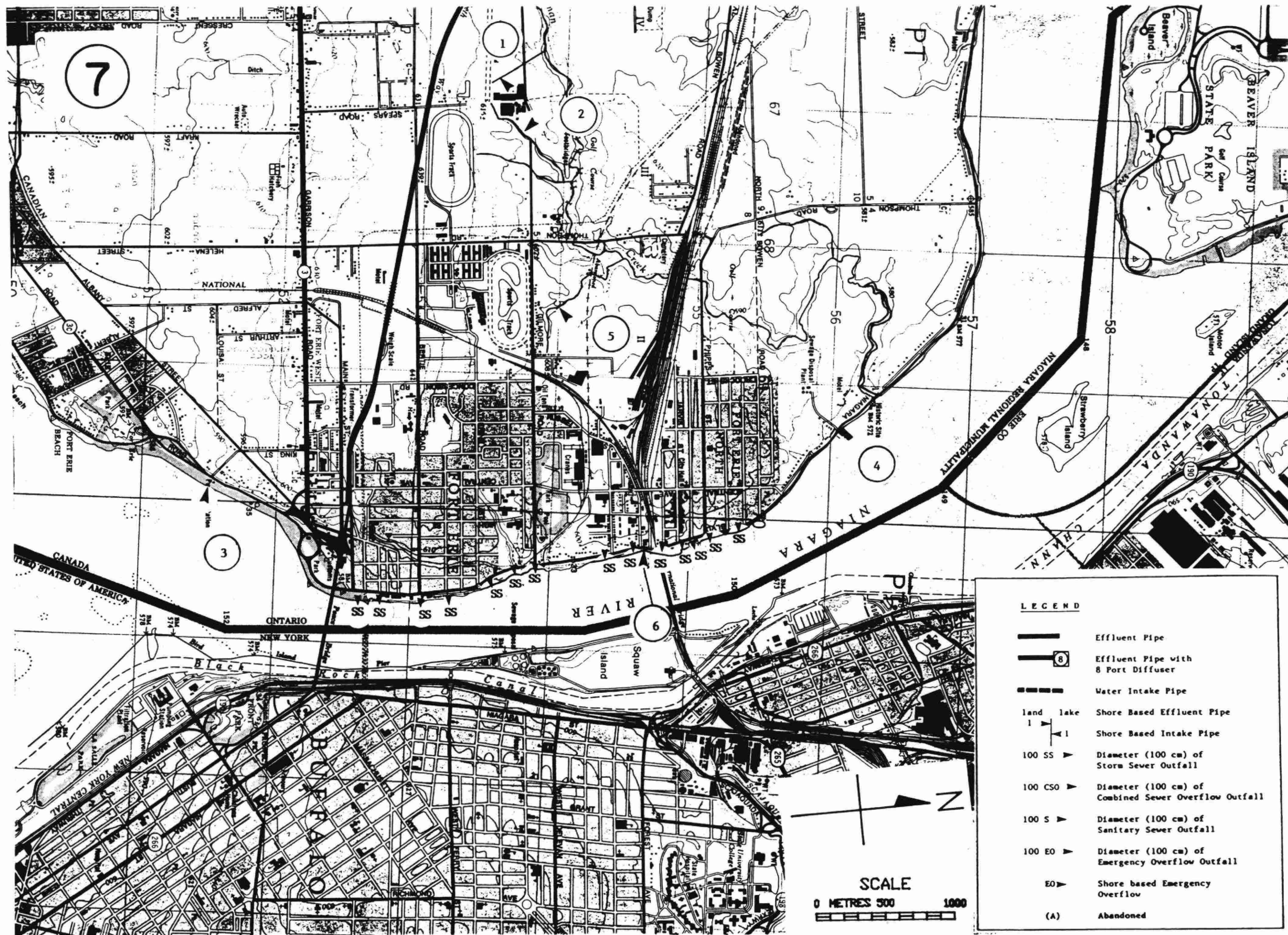
For St. Catharines
Sewer Outfalls see
Vol. 7 Map 3



- LEGEND
- Effluent Pipe
 - Effluent Pipe with 8 Port Diffuser
 - Water Intake Pipe
 - Shore Based Effluent Pipe
 - Shore Based Intake Pipe
 - Diameter (100 cm) of Storm Sewer Outfall
 - Diameter (100 cm) of Combined Sewer Overflow Outfall
 - Diameter (100 cm) of Sanitary Sewer Outfall
 - Diameter (100 cm) of Emergency Overflow Outfall
 - Shore based Emergency Overflow
 - Abandoned



Name	Fleet Manufacturing Co.	Fleet Manufacturing Co.	Port Erie South Pump Stn.	Anger Ave. WPCP	Canadian Oxy-Chemicals	Port Erie North Pump Stn.
Intake/Outfall	Outfall #1	Outfall #2	Intake	Outfall	Outfall	Intake
UMIS/IMIS No.	0001570001	0001570001	NA	NA	0001590009	NA
Structure No.	1	2	3	4	5	6
Map Number	7	7	7	7	7	7
Operating Authority	IND	IND	Niagara RM	Niagara RM	IND	Niagara RM
Location	Port Erie	Port Erie	Port Erie	Port Erie	Port Erie	Port Erie
Supplier/Receiver	Frenchman's Creek	Frenchman's Creek	Niagara River	Niagara River	Frenchman's Creek	Niagara River
Point of Discharge	River Mouth	River Mouth		Shore	River Mouth	
Terminal Basin	Niagara River	Niagara River	Niagara River	Niagara River	Niagara River	Niagara River
Activity	Mfg. of aircraft Assemblies and Components	Mfg. of aircraft Assemblies and Components	Municipal Water Treatment	Municipal Sewage Treatment	Chemicals and related compounds	Municipal Water Treatment
Process Type	NA	NA	NA	Primary Treatment	Using Kettles, Rollers and Pulverizers Phenolic resins & mouldings are Mfg.	NA
Supply/Discharge Type	Continuous	Continuous	NA	Continuous	Continuous	NA
Treatment Type	None	None	NA	Sedimentation Chlorination P Removal-Continuous	None	
Comments	West Plant discharges to Frenchman's Creek Cooling and Stormwater	East Plant discharges to Frenchman's Creek Cooling and Stormwater	Decommisioned in 1982. Water supplied from Rosehill WTP Vol. 5 Map 61 Structure 1			Decommisioned in 1982. Water supplied from Rosehill WTP Vol. 5 Map 61 Structure 1
Design Flow (1000m3/day)	NA	NA	NA	16.38	0.50	NA
Mean Annual Flow (1000m3/day)	0.65	0.35	NA	12.95	0.20	NA
Pipe length from shore (m)	NA	NA	NA	80.00	0.00	30.00
Pipe Diameter (cm)	NA	NA	50.00	60.00	61.00	60.00
Water Depth at end of pipe (m)	NA	NA	2.50	5.00	0.00	5.00
Water depth above end of pipe (m)	NA	NA	4.50	4.30	0.00	4.50
Diffuser	NO	NO		NO	NO	
Number of ports						

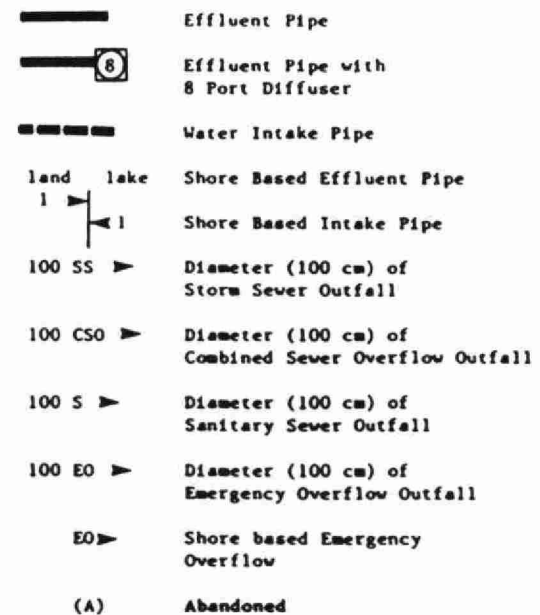


LEGEND

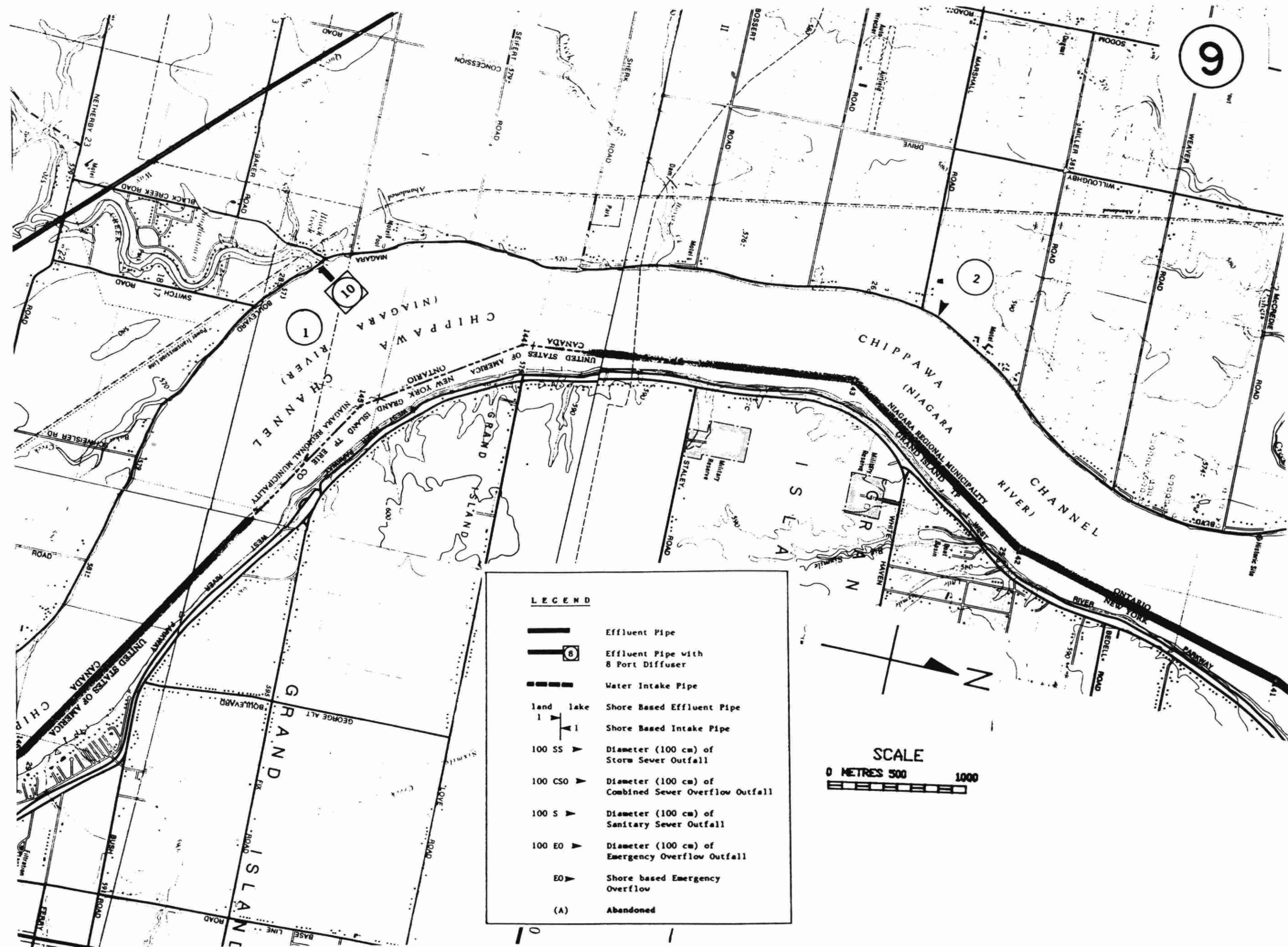
- Effluent Pipe
- 8 Effluent Pipe with 8 Port Diffuser
- Water Intake Pipe
- land lake Shore Based Effluent Pipe
- 1 1 Shore Based Intake Pipe
- 100 SS > Diameter (100 cm) of Storm Sewer Outfall
- 100 CSO > Diameter (100 cm) of Combined Sewer Overflow Outfall
- 100 S > Diameter (100 cm) of Sanitary Sewer Outfall
- 100 EO > Diameter (100 cm) of Emergency Overflow Outfall
- EO > Shore based Emergency Overflow
- (A) Abandoned

SCALE

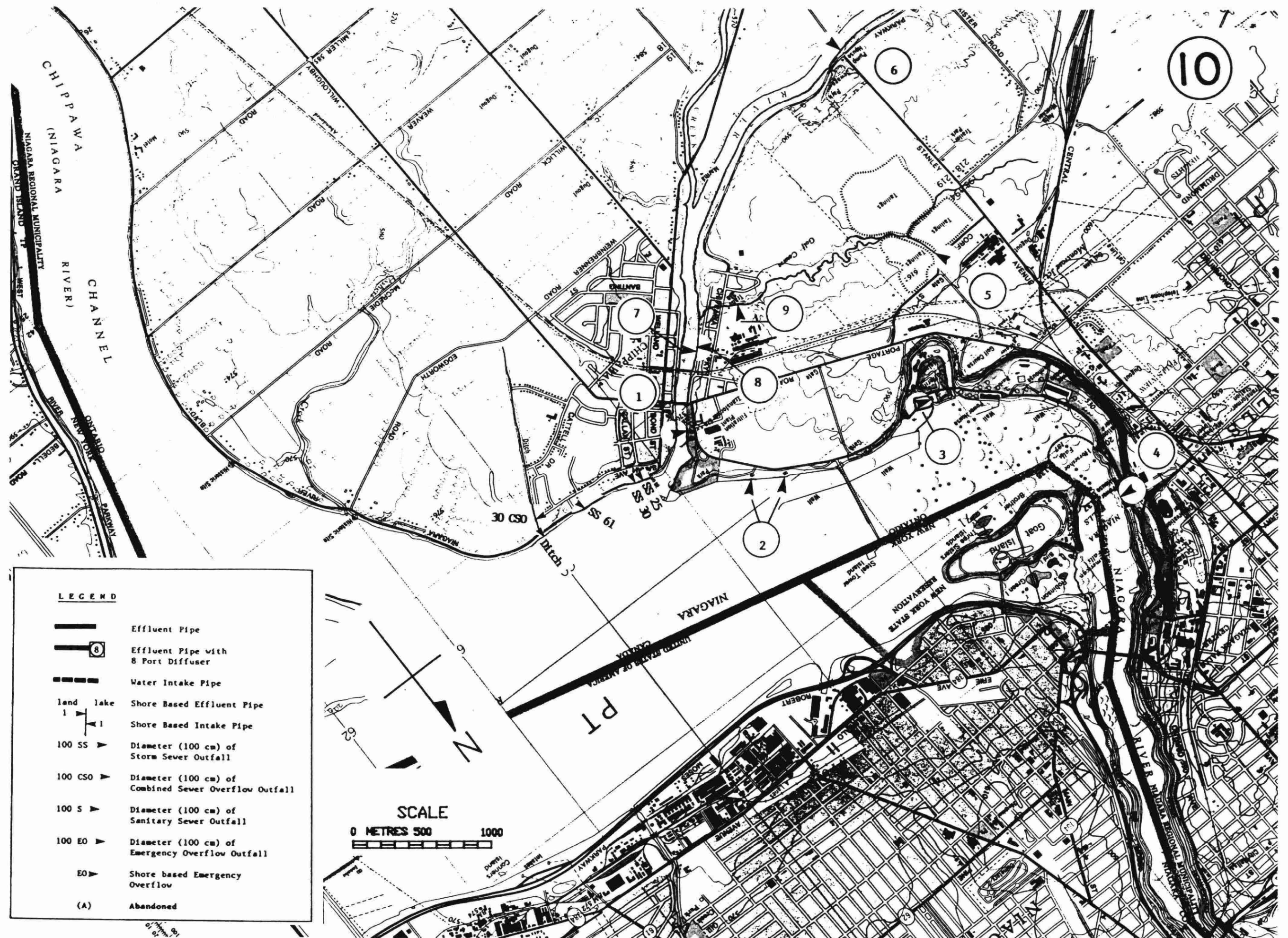
0 METRES 500 1000



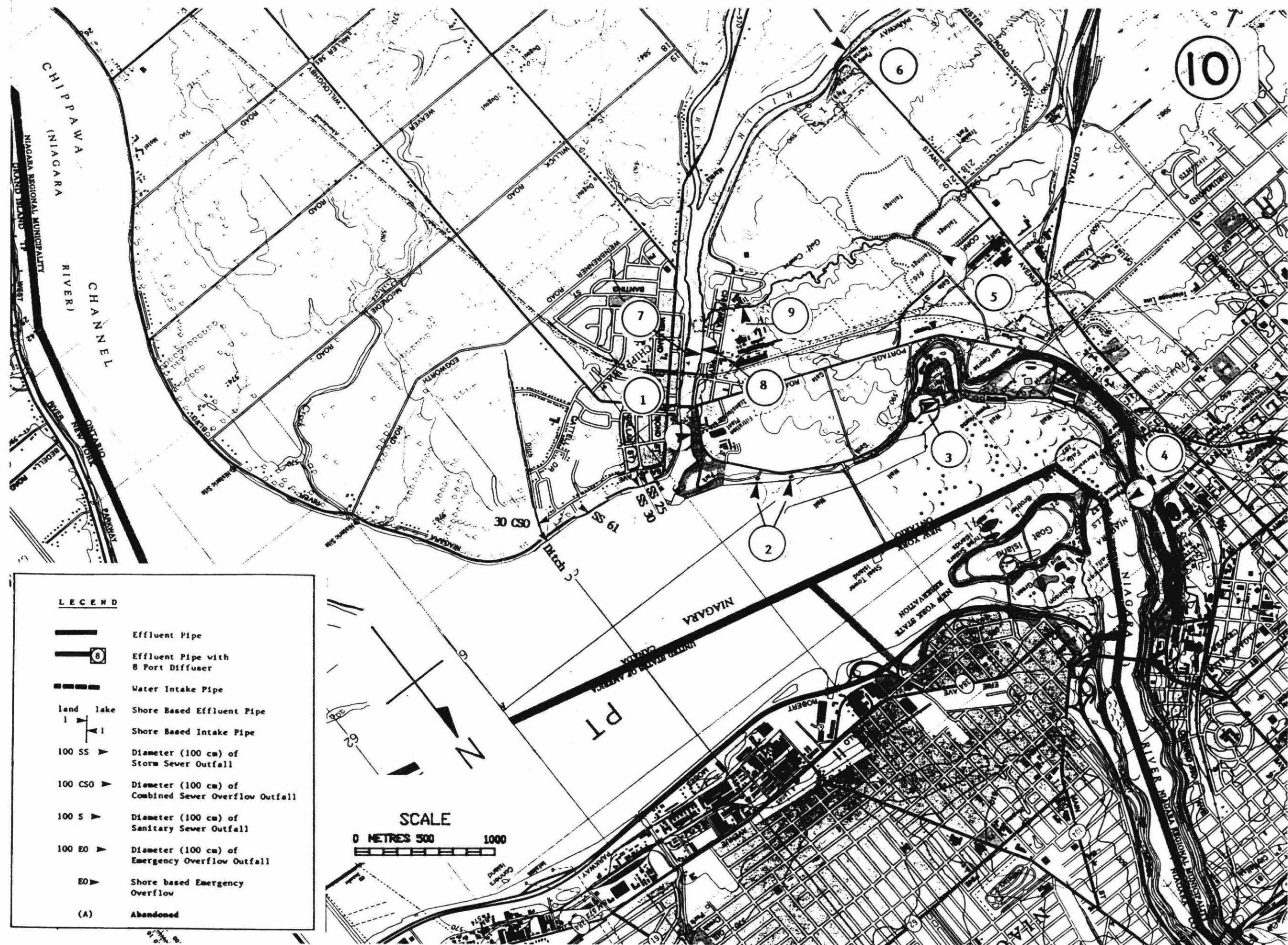
Name	Stevensville Lagoon	Holiday Farms					
Intake/Outfall	Outfall	Outfall					
UNIS/INIS No.	NA	NA					
Structure No.	1	2					
Map Number	9	9					
Operating Authority	Niagara RM	IND					
Location	Port Erie	Niagara Falls					
Supplier/Receiver	Niagara River	Niagara River					
Point of Discharge	Offshore	Shore					
Terminal Basin	Niagara River	Niagara River					
Activity	Municipal Sewage Treatment	Food Processing					
Process Type	Primary Treatment	NA					
Supply/Discharge Type	Continuous	Continuous					
Treatment Type	2 Settling Lagoons	Lagoons					
Comments							
Design Flow (1000m3/day)	2.91	NA					
Mean Annual Flow (1000m3/day)	0.87	NA					
Pipe length from shore (m)	120.00	NA					
Pipe Diameter (cm)	30.00	NA					
Water Depth at end of pipe (m)	6.00	NA					
Water depth above end of pipe (m)	6.00	NA					
Diffuser	YES	NO					
Number of ports	10						



Name	Niagara Falls WTP	Sir Adam Beck HGS	Ontario Power Co.	Ontario Power Co.	Electro Minerals(CAN)Inc.	Electro Minerals(CAN)Inc.	Morton Company
Intake/Outfall	Intake	Intake	Intake	Outfall	Outfall	Intake	Intake
UMIS/INIS No.	220002084	NA	NA	NA	0001660000	0001660000	0001650001
Structure No.	1	2	3	4	5	6	7
Map Number	10	10	10	10	10	10	10
Operating Authority	Niagara RM	Ontario Hydro	Ontario Hydro	Ontario Hydro	IND	IND	IND
Location	Niagara Falls	Niagara Falls	Niagara Falls	Niagara Falls	Niagara Falls	Niagara Falls	Niagara Falls
Supplier/Receiver	Welland/Niagara River	Niagara River	Niagara River	Niagara River	Pell Creek	Welland River	Welland River
Point of Discharge				Shore	River Mouth		
Terminal Basin	Niagara River	Niagara River	Niagara River	Niagara River	Niagara River	Niagara River	Niagara River
Activity	Municipal Water Treatment	Electricity Generation	Electricity Generation	Electricity Generation	Aluminium Oxide Mfg.	Aluminium Oxide Mfg.	Manufacturing industrial minerals
Process Type	Physical and Chemical Treatment	Hydro Electric Facility	Hydro Electric Facility	Hydro Electric Facility	Abrasive oxides are manufactured in electric arc furnace	Abrasive oxides are manufactured in electric arc furnace	Electric arc furnace used to produce abrasive oxides
Supply/Discharge Type	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Treatment Type	Screening, Coagulation Flocculation, Filtration Chlorination	Screening	Screening	Screening	Screening & 7 settling Ponds	Rotating & Backwash Screens	NA
Comments	Also supplies water to the St. Davids Queenston area of Niagara-on-the-Lake	Sir Adam Beck operation has two 13.7 m intake tunnels connecting to the Chipawa Power Canal	Ontario Power has 2 5.4m intake structures	Ontario Power discharges to the Maid of the Mist Pool.			
Design Flow (1000m3/day)	145.00	79522.00	20064.00	20064.00	30.00	30.00	NA
Mean Annual Flow (1000m3/day)	53.50	79522.00	20064.00	20064.00	19.40	19.40	NA
Pipe length from shore (m)	0.00	0.00	0.00	0.00	0.70	4.00	NA
Pipe Diameter (cm)	120.00	1370.00	540.00	NA	75.00	75.00	NA
Water Depth at end of pipe (m)	8.00	NA	NA	NA	1.00	5.00	NA
Water depth above end of pipe (m)	6.00	NA	NA	NA	0.00	2.00	NA
Diffuser				NO	NO		
Number of ports							



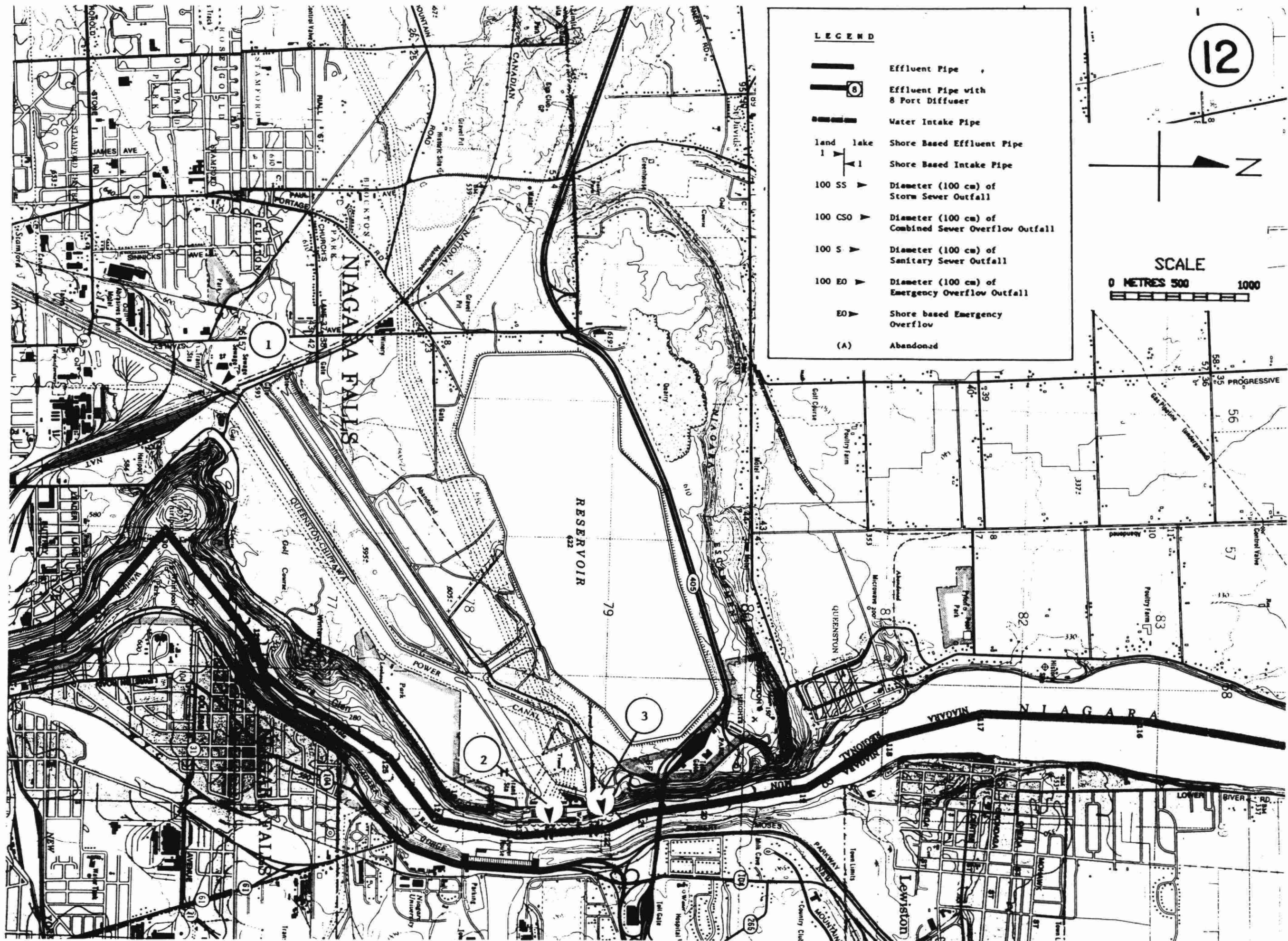
Name	Norton Company	Norton Company					
Intake/Outfall	Outfall	Outfall					
DMIS/INIS No.	0001650001	0001650001					
Structure No.	8	9					
Map Number	10	10					
Operating Authority	IND	IND					
Location	Niagara Falls	Niagara Falls					
Supplier/Receiver	Pell Ck. to Welland River	Welland River					
Point of Discharge	River Mouth	Shore					
Terminal Basin	Niagara River	Niagara River					
Activity	Manufacturing industrial minerals	Manufacturing industrial minerals					
Process Type	Electric arc furnace used to to produce abrasive oxides	Electric arc furnace used to to produce abrasive oxides					
Supply/Discharge Type	Continuous	Continuous					
Treatment Type	Solids precipitation oil/water separation and pH adjustment	Solids precipitation oil/water separation and pH adjustment					
Comments	Mean Annual Flow is for entire plant.	Mean Annual Flow is for entire plant.					
Design Flow (1000m3/day)	NA	NA					
Mean Annual Flow (1000m3/day)	10.30	10.30					
Pipe length from shore (m)	NA	NA					
Pipe Diameter (cm)	NA	NA					
Water Depth at end of pipe (m)	NA	NA					
Water depth above end of pipe (m)	NA	NA					
Diffuser	NO	NO					
Number of ports							



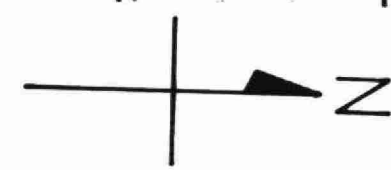
Name	Cyanamid Canada Inc.	Cyanamid Canada Inc.	Cyanamid Canada Inc.				
Intake/Outfall	Outfall	Intake	Outfall				
UMIS/INIS No.	0001550003	0001550003	0001550003				
Structure No.	1	2	3				
Map Number	11	11	11				
Operating Authority	IND	IND	IND				
Location	Niagara Falls	Niagara Falls	Niagara Falls				
Supplier/Receiver	Chippawa Power Canal	Chippawa Power Canal	Niagara River				
Point of Discharge	Shore		Shore				
Terminal Basin	Niagara River	Niagara River	Niagara River				
Activity	Industrial Minerals Manufacturing	Industrial Minerals Manufacturing	Industrial Minerals Manufacturing				
Process Type	Calcium Carbide produced in a electric arc furnace also calcium cyanamide,	Calcium Carbide produced in a electric arc furnace also calcium cyanamide,	Calcium Carbide produced in a electric arc furnace also calcium cyanamide,				
Supply/Discharge Type	Continuous	Continuous	Continuous				
Treatment Type	None	None	None				
Comments	Cooling Water Discharge	Cooling water Intake	Cooling Water Discharge				
Design Flow (1000m3/day)	22.00	39.00	17.20				
Mean Annual Flow (1000m3/day)	22.00	32.40	10.40				
Pipe length from shore (m)	0.00	0.00	0.00				
Pipe Diameter (cm)	76.00	36.00	137.00				
Water Depth at end of pipe (m)	10.00	3.40	0.00				
Water depth above end of pipe (m)	0.00	2.70	0.00				
Diffuser	NO		NO				
Number of ports							



Name	Stanford/Niagra STP	Sir Adam Beck #2 HGS	Sir Adam Beck #1 HGS				
Intake/Outfall	Outfall	Outfall	Outfall				
UMIS/IMIS No.	120001363	NA	NA				
Structure No.	1	2	3				
Map Number	12	12	12				
Operating Authority	Niagara RM	Ontario Hydro	Ontario Hydro				
Location	Niagara Falls	Niagara Falls	Niagara Falls				
Supplier/Receiver	Chippawa Power Canal	Niagara River	Niagara River				
Point of Discharge	Shore	Shore	Shore				
Terminal Basin	Niagara River	Niagara River	Niagara River				
Activity	Municipal Sewage Treatment	Electricity Generation	Electricity Generation				
Process Type	Secondary Treatment	Hydro Electric Facility	Hydro Electric Facility				
Supply/Discharge Type	Continuous	Continuous	Continuous				
Treatment Type	Rotating biological Contact P Removal-Continuous	None	None				
Comments	Plant upgraded to secondary treatment in 1985	Flow volumes are a combination of Beck 1 + 2	Beck 1 is an open power canal 14.63m x 9.14m Flows are a combination of Beck 1 + 2				
Design Flow (1000m3/day)	68.10	79522.00	79522.00				
Mean Annual Flow (1000m3/day)	57.00	79522.00	79522.00				
Pipe length from shore (m)	0.00	0.00	0.00				
Pipe Diameter (cm)	150.00	NA	1371.60				
Water Depth at end of pipe (m)	10.00	NA	NA				
Water depth above end of pipe (m)	0.00	NA	NA				
Diffuser	NO	NO	NO				
Number of ports							



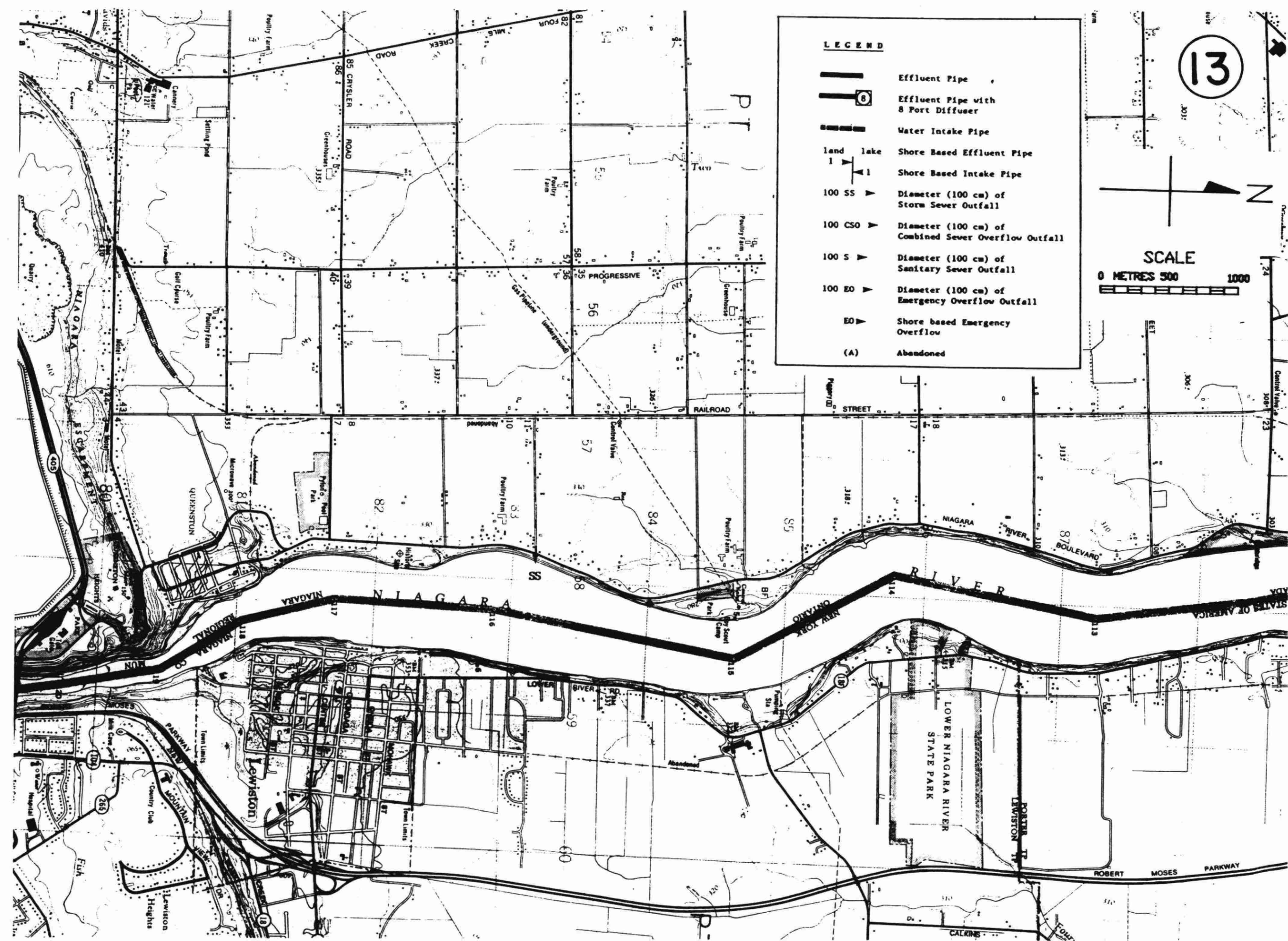
13



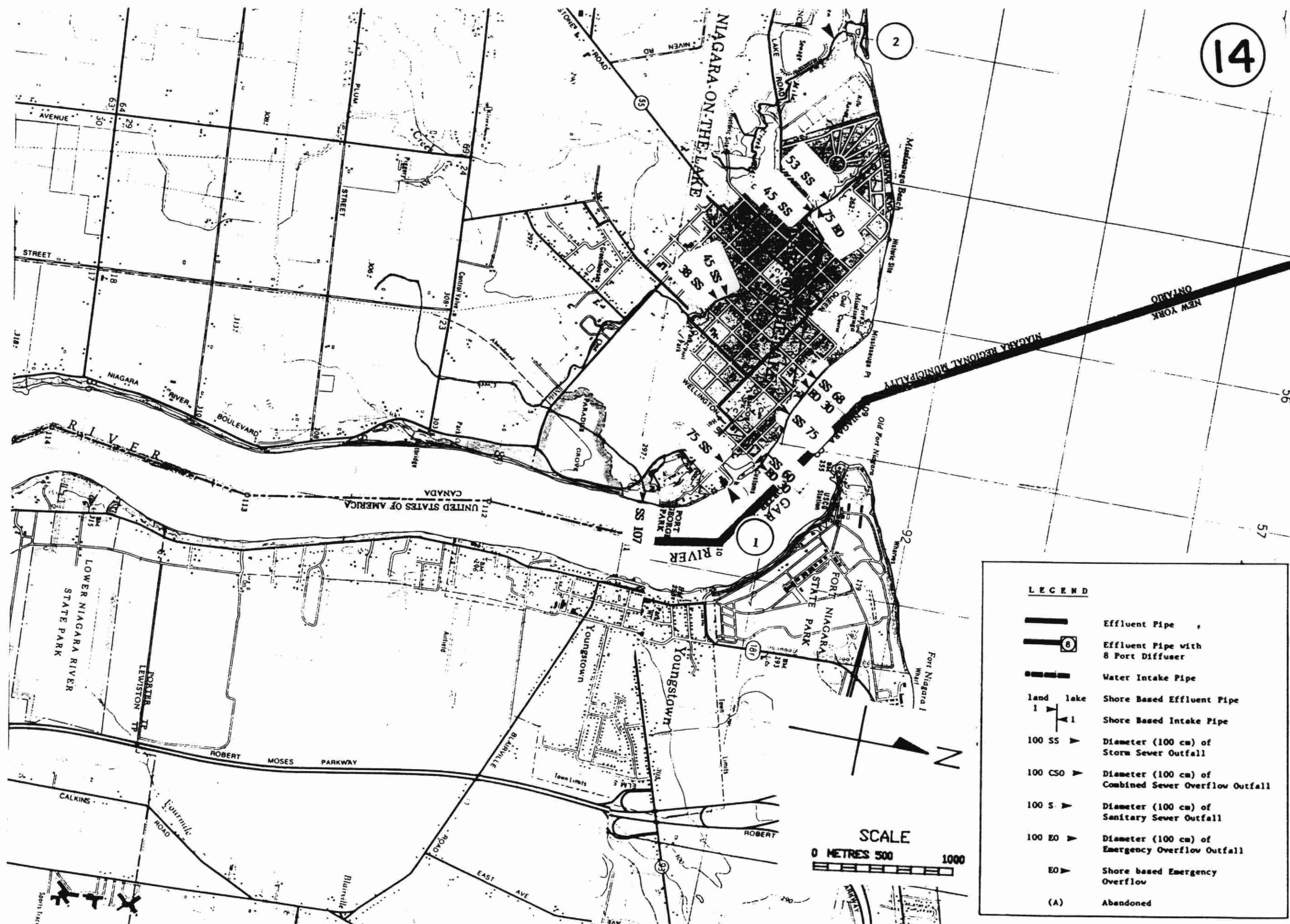
SCALE
0 METRES 500 1000

LEGEND

	Effluent Pipe
	Effluent Pipe with 8 Port Diffuser
	Water Intake Pipe
	Shore Based Effluent Pipe
	Shore Based Intake Pipe
	Diameter (100 cm) of Storm Sewer Outfall
	Diameter (100 cm) of Combined Sewer Overflow Outfall
	Diameter (100 cm) of Sanitary Sewer Outfall
	Diameter (100 cm) of Emergency Overflow Outfall
	Shore based Emergency Overflow
	Abandoned














Name	Niagara-on-the-Lake WTP	Niagara-on-the-Lake STP				
Intake/Outfall	Intake	Outfall				
UMIS/IMIS No.	NA	120001238				
Structure No.	1	2				
Map Number	14	14				
Operating Authority	Niagara RM	Niagara RM				
Location	Niagara-on-the-Lake	Niagara-on-the-Lake				
Supplier/Receiver	Niagara River	Creek to Lake Ontario				
Point of Discharge		River Mouth				
Terminal Basin	Niagara River/L. Ontario	Lake Ontario				
Activity	Municipal Water Treatment	Municipal Sewage Treatment				
Process Type	NA	NA				
Supply/Discharge Type	NA	NA				
Treatment Type	NA	NA				
Comments	Two intake ports. Plant Decommissioned Aug. in 1986 1986. Water from DeCew WSS	Plant decommissioned				
Design Flow (1000m3/day)	NA	3.81				
Mean Annual Flow (1000m3/day)	NA	3.47				
Pipe length from shore (m)	28.00	NA				
Pipe Diameter (cm)	25.00	NA				
Water Depth at end of pipe (m)	9.50	NA				
Water depth above end of pipe (m)	9.00	NA				
Diffuser		NO				
Number of ports						



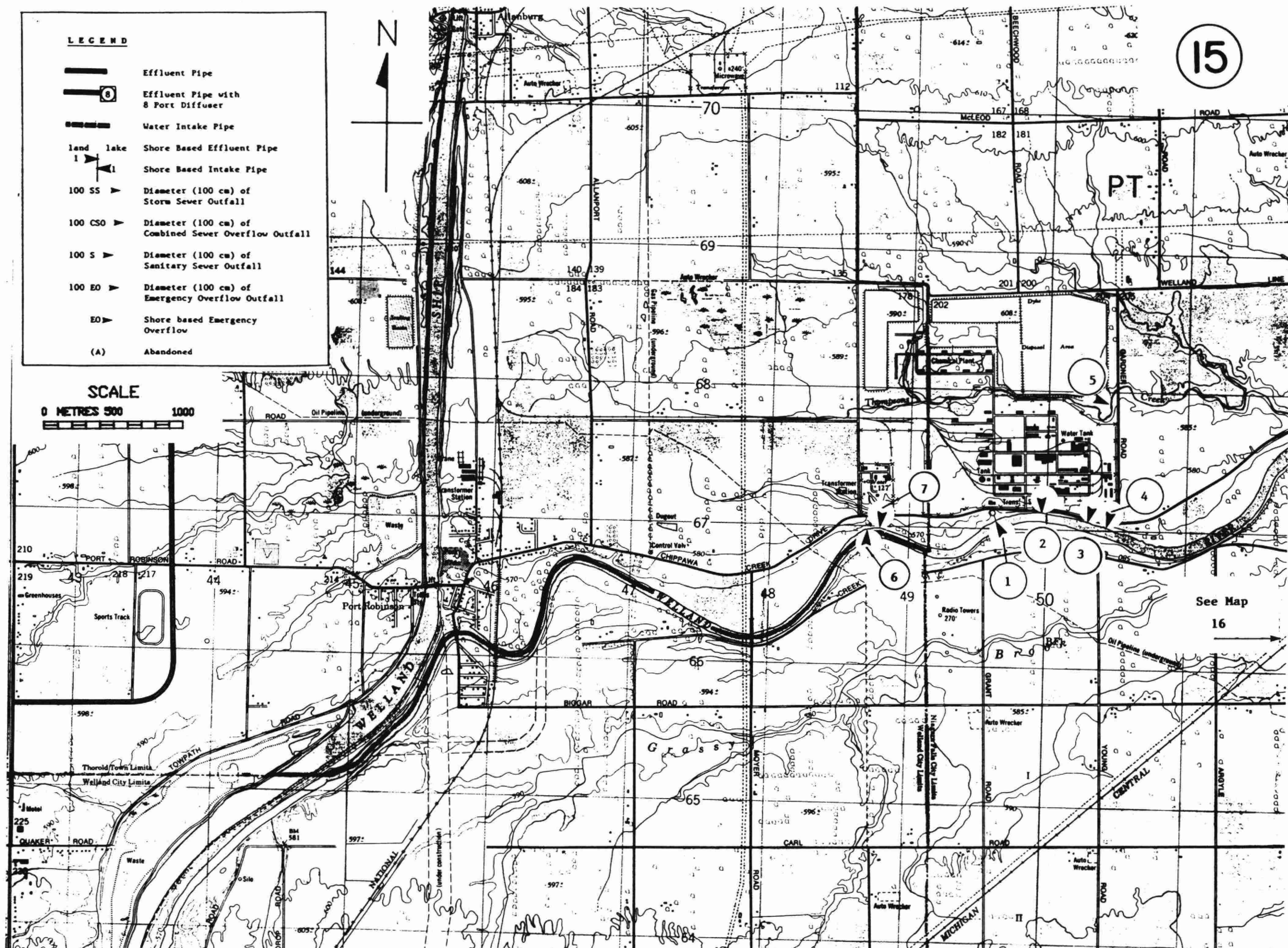
Name	Cyanamid Canada Inc.	Cyanamid Canada Inc.	Cyanamid Canada Inc.	Cyanamid Canada Inc.	Cyanamid Canada Inc.	BPGoodrich Canada	BPGoodrich Canada
Intake/Outfall	Intake	Outfall #1	Outfall #2	Outfall #3	Outfall #4	Intake	Outfall
UMIS/IMIS No.	0001550102	0001550102	0001550102	0001550102	0001550102	0000370304	0000370304
Structure No.	1	2	3	4	5	6	7
Map Number	15	15	15	15	15	15	15
Operating Authority	IND	IND	IND	IND	IND	IND	IND
Location	Niagara Falls	Niagara Falls	Niagara Falls	Niagara Falls	Niagara Falls	Niagara Falls	Niagara Falls
Supplier/Receiver	Welland River	Welland River	Welland River	Welland River	Thompson Creek(W. River)	Welland River	Welland River
Point of Discharge		River Mouth	River Mouth	River Mouth	River Mouth		Shore
Terminal Basin	Niagara River	Niagara River	Niagara River	Niagara River	Niagara River	Niagara River	Niagara River
Activity	Mfg. of organic and inorganic chemicals	Mfg. of organic and inorganic chemicals	Mfg. of organic and inorganic chemicals	Mfg. of organic and inorganic chemicals	Mfg. of organic and inorganic chemicals	Plastics Manufacturing	Plastics Manufacturing
Process Type	Mfg. of fertilizers catalysts, phosphine and cyanamide chemicals	Mfg. of fertilizers catalysts, phosphine and cyanamide chemicals	Mfg. of fertilizers catalysts, phosphine and cyanamide chemicals	Mfg. of fertilizers catalysts, phosphine and cyanamide chemicals	Mfg. of fertilizers catalysts, phosphine and cyanamide chemicals	Polymerization of Polyvinyl Chloride Resin	Polymerization of Polyvinyl Chloride Resin
Supply/Discharge Type	Continuous	Intermittent	Intermittent	Intermittent	Continuous	Continuous	Continuous
Treatment Type	Ferrous sulphate clarifier, water softener	Containment & reuse of Nitrogen streams. Lagoons for solids separation	Containment & reuse of Nitrogen streams. Lagoons for solids separation	Containment & reuse of Nitrogen streams. Lagoons for solids separation	Containment & reuse of Nitrogen streams. Lagoons for solids separation	Clarification of solids Sand & Carbon Filtration Demineralization and Softening	Secondary, activated sludge package plant facultative lagoons
Comments	Iron sludge from clarifier disposed of in sludge impound	Decommissioned in 1975 Still some stormwater discharge	Decommissioned 1984 may still have some stormwater discharge	No flow exept for seepage and stormwater	Thompson's Creek contains all sources of discharge from plant, incl. storm-water runoff.		Discharge above water level
Design Flow (1000m3/day)	50.00	13.00	13.00	NA	21.60	6.50	8.10
Mean Annual Flow (1000m3/day)	25.00	0.00	0.00	NA	21.60	2.20	2.20
Pipe length from shore (m)	0.00	0.00	1.00	1.00	NA	0.00	0.00
Pipe Diameter (cm)	NA	91.44	91.44	45.70	NA	NA	30.00
Water Depth at end of pipe (m)	NA	0.00	0.00	0.00	NA	NA	0.00
Water depth above end of pipe (m)	NA	0.00	0.00	0.00	NA	NA	0.00
Diffuser		NO	NO	NO	NO		NO
Number of ports							

LEGEND

-  Effluent Pipe
-  Effluent Pipe with 8 Port Diffuser
-  Water Intake Pipe
-  Shore Based Effluent Pipe
-  Shore Based Intake Pipe
-  Diameter (100 cm) of Storm Sewer Outfall
-  Diameter (100 cm) of Combined Sewer Overflow Outfall
-  Diameter (100 cm) of Sanitary Sewer Outfall
-  Diameter (100 cm) of Emergency Overflow Outfall
-  Shore based Emergency Overflow
-  Abandoned

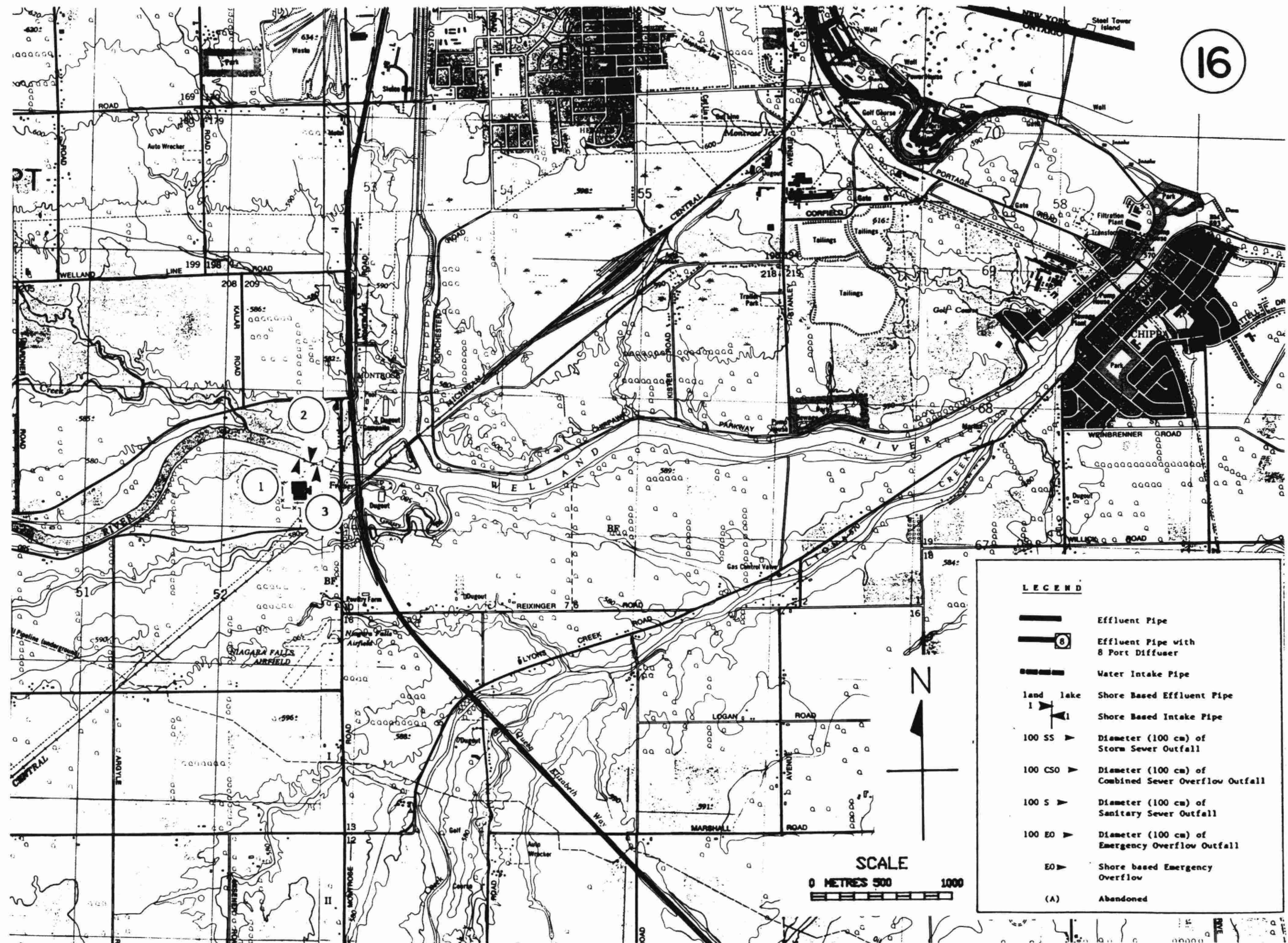
SCALE

0 METRES 500 1000



See Map
16

Name	Ford Motor Co. Can. Ltd.	Ford Motor Co. Can. Ltd.	Ford Motor Co. Can. Ltd.				
Intake/Outfall	Outfall	Intake	Outfall				
UMIS/INIS No.	0000020503	0000020503	0000020503				
Structure No.	1	2	3				
Map Number	16	16	16				
Operating Authority	IND	IND	IND				
Location	Niagara Falls	Niagara Falls	Niagara Falls				
Supplier/Receiver	Welland River	Welland River	Welland River				
Point of Discharge	River Mouth		River Mouth				
Terminal Basin	Niagara River	Niagara River	Niagara River				
Activity	Auto Parts Manufacturing	Auto Parts Manufacturing	Auto Parts Manufacturing				
Process Type	Manufacturing of Auto Safety Glass	Manufacturing of Auto Safety Glass	Manufacturing of Auto Safety Glass				
Supply/Discharge Type	Continuous	Continuous	Continuous				
Treatment Type	Oil Separation, Chemical Breaking & Settling	Walker Process Clarification by flocculation and settling	NA				
Comments			Air Conditioning Cooling Water and Washer Rinse Water				
Design Flow (1000m3/day)	2.82	8.60	5.73				
Mean Annual Flow (1000m3/day)	2.00	3.63	1.63				
Pipe length from shore (m)	0.00	0.00	0.00				
Pipe Diameter (cm)	30.00	150.00	60.00				
Water Depth at end of pipe (m)	NA	3.04	NA				
Water depth above end of pipe (m)	NA	3.04	NA				
Diffuser	NO		NO				
Number of ports							





(16139)

TD/223.3/C43/Vol.VI/MOE